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ROENTGENOLOGIC ASPECTS OF VARIOUS TYPES OF HERNIA*

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Here and there in our routine work, we have encountered cases of hernia in which the roentgen-ray examinations have been very interesting, and at times life saving. Some of these experiences have occurred with ordinary inguinal and postoperative ventral hernia and others with umbilical hernia; but the most striking have been found with diaphragmatic and intra-abdominal herniations. Relatively few of the cases have been studied definitely on account of the hernia; indeed, in many, especially in the small diaphragmatic and retroperitoneal hernias, there has been little in the clinical history or physical examination to suggest the existence of such an abnormality. It is also true that when these cases were worked out, it became evident that there was a definite relation between the hernia and the symptoms, which at first seemed so slightly related. The fact that these types of hernia are very rare should not discourage their study with the roentgen rays, for surely the rarer and the more obscure the lesion, the more credit to the examiner for discovering it.

Many physicians will readily acknowledge the haziness of their small fund of information concerning retroperitoneal hernia. Many who have had their attention drawn to this condition have had the knowledge thrust on them at the operating or necropsy table. To date, the literature contains very few references to cases of intra-abdominal hernia correctly diagnosed prior to operative or necropsy check, and a study of the published reports makes it very clear that our best means of reaching a correct diagnosis is through the proper interpretation of roentgenograms. It is therefore our purpose in this communication to review briefly the roentgenologic aspects of some of the different types of abdominal hernia, refer to some of our personal cases, and discuss some of the difficulties of differential diagnosis.

In addition to the various types of retroperitoneal hernia, we have elected to discuss diaphragmatic, umbilical, inguinal and postoperative hernias. We have had no case of femoral hernia in which the roentgenograms have been helpful, although it will be evident from our discussion of inguinal hernia that a roentgen-ray study of femoral hernia will occasionally be useful.

The retroperitoneal hernias occur in four principal groups: (1) duodenal hernia, of which Moynihan described nine varieties; (2) paracecal hernia; (3) intersigmoid hernia, and (4) hernia into the lesser peritoneal cavity, through the foramen of Winslow or through the transverse mesocolon.

PARADUODENAL HERNIA

Although Moynihan has described nine fossae around the duodenojejunal junction, the most common hernias occur in relation to the superior and inferior paraduodenal folds and their corresponding fossae. These folds are composed of poorly vascularized, thin peritoneal membranes passing laterally from the bowel to the posterior wall of the abdomen. The lateral margins of these membranes are usually joined to form a semicircular fold beneath which lies the fossa of Landzert. Into this fossa usually occurs the left paraduodenal hernia. The fossa of Waldeyer, into which most of the right paraduodenal hernias occur, lies in the first part of the mesojejunum, bounded in front by the superior mesenteric artery and behind by the lumbar vertebrae, its orifice pointing to the left and its blind extremity to the right. Duodenal hernia occurs on the left side three times as often as on the right. Of ninety-one cases of left paraduodenal hernias reviewed by Pikin,[1] only three were clinically recognized; and of thirty-one cases of right duodenal hernia collected by Nagel and by Lower and Higgins,[2] a correct diagnosis was not made in any.

It is therefore evident that we should carefully review the possibilities of making a correct interpretation of the roentgenograms. Our experience impresses us with the fact that it is possible to diagnose correctly retroperitoneal hernia involving the bowel. We offer herewith the roentgenograms in two of our cases, and call attention to the fact that the published roentgenograms in the reports of Lower and of Nagel show identically the same characteristics displayed in our own illustrations. In the future, we believe that diagnosticians should bear in mind the possibility of encountering this type of retroperitoneal hernia and make a correct diagnosis in most of the cases.

In a few of the published cases, the results of the roentgen-ray examinations have been given in detail, even though the proper interpretation was not recognized until after operation. The disposition of the small bowel has been typical, as illustrated in figure 1, a roentgenogram of one of our own cases in which a correct preoperative diagnosis was based on the

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1. Pikin, cited by Nagel, G. W. Right Paraduodenal Hernia, J. A. M. A. **81**: 907 (Sept. 15) 1923.

2. Lower, W. E., and Higgins, C. C.: Ann. Surg. **82**: 576 (Oct.) 1925.

roentgen-ray study. It will be observed that the small intestine coils lie confined to a certain well bounded zone, more or less spherical (fig. 2), from which they cannot be disturbed by any amount of manipulation or change of position of the patient. The part of the small bowel (usually almost the entire small intestine) thus compressed into an ovoid mass remains supported

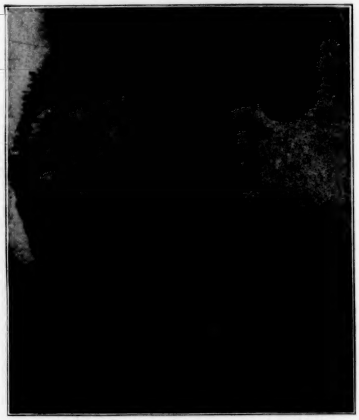

Fig. 1.—The authors' first case of retroperitoneal hernia showing the spherical, well bounded zone in which the small intestine is confined.

high in the abdomen when the patient assumes the erect position, whereas normally the small bowel gravitates downward into the true pelvis with the patient erect. There is often a marked distortion or displacement of the colon, and sometimes also of the stomach, but we have found several cases in which no distortion of the stomach or large bowel is evident. In some cases the entire colon lies in the left side of the abdomen, so that the small bowel appears in the right upper quadrant, suggesting a congenital failure of the colon to rotate. In fact, in the differentiation between retroperitoneal hernia and an incomplete rotation of the colon lies one of the obstacles to correct interpretation. In every case which seems to present evidence of incomplete rotation, that is, in which the duodenum comes from the pylorus directly toward the right, with distribution of the upper jejunum on the right instead of on the left side of the midline, one should suspect a possible paraduodenal hernia. Sometimes there is a dilatation of the duodenum due to constriction of the first part of the jejunum by the neck of the sac. In one of our cases, the terminal ileum reaching up to the hernial sac was visualized by the opaque enema passing through the ileocecal valve (fig. 3).

Reference has been made to the greater frequency of left as compared with right paraduodenal hernia. It would be desirable to differentiate between these two types of hernia in advance of operation, but the roentgen-ray examination hardly permits more than a conjecture. From a practical standpoint, there is little advantage to be derived from such a detail of interpretation. When we have once found the hernia, it is more important to determine, if possible, whether adhesions exist, whether it is possible to reduce the hernia, and whether acute obstruction is likely to supervene; but these are all problems which have not yet been solved by roentgen-ray study. The important thing is the determination of a retroperitoneal hernia; the indication is usually for surgical relief, though the question of surgical indication may now and then be debatable.

There is usually only small intestine in the hernial sac, but Morton's [3] case showed cecum and ascending colon in the hernia, and Pybus [4] tells of a case in which there was herniation of a few inches of the descending colon.

PARACECAL AND INTERSIGMOID HERNIA

The paracecal fossa lies posterior to the cecum and extends upward toward the kidney. A hernia into this fossa is a great rarity. In one case from the Mayo Clinic,[5] there was an accompanying distortion of the cecum toward the left, but the reporter considered the unusual position of the cecum to be due to a transposition of the viscera. We also have one case to report, and in this the cecum occupied the normal position. In the stereoroentgenograms, it was easy to see that several coils of small intestine occupied a position behind and to the right of the ascending colon and cecum. These herniated coils were so densely adherent that it was necessary to resect 20 inches of terminal ileum, the cecum and ascending colon, with end-to-side anastomosis, to give relief. The patient remains in excellent health fourteen years after the operation. A similar report is published by Shapiro,[6] in which a loop of small intestine surrounded the cecum and disappeared in a little opening in the mesentery from which he extracted 20 cm. of gangrenous ileum. No roentgen-ray study was made of Shapiro's case.

We have not recognized a case of hernia into the intersigmoid fossa, though the literature gives us accounts of some interesting cases, in the light of which we should in the future be prepared to make a proper diagnosis. To recognize the presence of small intestine behind or between the layers of the sigmoid mesocolon, stereoscopic and fluoroscopic manipulative studies should be made with a combined barium meal and opaque enema, so that the small intestine and the sigmoid may be filled simultaneously. Of course, in the event of only a few inches of small intestine being incarcerated in the sac, there will be great difficulty of recognition, but in the few reported cases a considerable portion of small bowel had entered the hernia. Less than a dozen intersigmoid hernias have been reported.

Fig. 2.—Schematic drawing taken from Moynihan, showing position of small bowel in retroperitoneal hernial sac.

3. Morton, J. J.: Atresia of the Duodenum and Right Internal Hernia, Am. J. Dis. Child. **25**: 371 (May) 1923.
4. Pybus, F. C.: Brit. M. J., 1916, no. 2, cited by Andrews, Edmund: Surg. Gynec. Obst. **37**: 740 (Dec.) 1923.
5. Copenhaver, N. H.: Intra-Abdominal Hernias, Arch. Surg. **7**: 332 (Sept.) 1923.
6. Shapiro, A.: Internal Hernia, Zentralbl. f. Chir. **52**: 1541 (July 11) 1925.

HERNIA INTO THE LESSER PERITONEAL CAVITY

Hernia into the lesser peritoneal cavity presents a more fertile field for roentgen-ray investigation. Several cases have been correctly interpreted prior to operation. The proper reading of the roentgenograms was possible through repeated examination and the use of manipulation with the protected hand under the fluoroscopic screen. Though the literature makes no reference to the value of the stereoscopic method, its advantage need only be mentioned. The stereoscopic films must be made with very brief exposure (one-tenth second or less) and with very little interim between the two exposures. Good results are obtainable only with apparatus that permits completion of the two films within one and a half or two seconds, the breath being held.

Hernia through the foramen of Winslow occurs as frequently as right duodenal hernia. It is probable that the small size of the foramen and the fact that the transverse colon lies in the way are two factors that discourage the passage of small intestine through this orifice. Most of the reported cases present gross abnormalities, such as unusually long mesentery; and it is evident that without some such abnormal condition this type of hernia could not occur. To establish the existence of such a hernia, small bowel should be identified anterior to the hepatic flexure or first part of the transverse colon.

But there is another way through which small bowel may pass into the lesser peritoneal sac; namely, through a breach in the transverse mesocolon. The breach may be of traumatic or congenital origin; and the hernia, as is curiously the case in the majority of instances reported, may be associated with a coexisting gastric or duodenal ulcer, though no satisfactory explanation has been offered for the coexistence of the two lesions. Lombard [7] published a summary of twenty-eight cases, not including an additional one of his own. Of these, eight were discovered at necropsy, and no history was obtainable; in the remaining twenty cases, eleven were characterized by digestive complaints, and nine showed intestinal obstruction, which was chronic in three and acute in six.

Pfanner and Staunig [8] were able to make a correct roentgenologic and clinical diagnosis in a case prior to operation. The roentgen-ray study showed a bilocular stomach with an ulcer on the lesser curvature. Two parallel loops of small intestine passed above the lesser curvature, being directed anteriorly and downward, passing in front of the body of the stomach and the transverse colon, toward the right iliac fossa. It was impossible to move them laterally by manipulation under screen guidance. Operation confirmed the roentgen-ray examination.

Heaney and Simpson [9] report a similar case roentgenologically. Again, there was found an hour-glass stomach. The hepatic flexure was low, the first part of the transverse colon passing down toward the pelvis, where it could not be manipulated free from the cecum. There was marked delay in the colon. Operation revealed small intestine emerging from a large transverse opening in the gastrocolic omentum, having found its way into the lesser peritoneal cavity through a transmesocolic rent (fig. 4). These authors reviewed twenty-one cases of hernia of small intestine through the transverse mesocolon, finding that the small bowel emerged in one case through the foramen of Winslow, in eight through the gastrohepatic omentum, in three through the gastrocolic omentum, while in the nine remaining cases the herniated small intestine remained in the lesser peritoneal sac. In fourteen of the twenty-one cases, a gastric or duodenal ulcer or a carcinoma was present.

7. Lombard, Pierre: Hernies transmésocoliques, J. de chir. **22**: 503 (Dec.) 1923.

8. Pfanner, W., and Staunig, K.: Beitr. z. klin. Chir. (Bruns') **121**: 375, 1921.

9. Heaney, F. S., and Simpson, G. C. E.: Hernia Through the Transverse Mesocolon, Brit. J. Surg. **13**: 387 (Oct.) 1925.

DIAPHRAGMATIC HERNIA

Diaphragmatic hernias usually occur through the posterior part of the diaphragm on the left side. Right sided hernias occur only about once to ten times on the left side (Eppinger). The principal difficulty in differential diagnosis is due to the similarity of the roentgenograms in relaxation or eventration of the diaphragm and in true diaphragmatic hernia, especially in the traumatic cases. The contents of the hernia may include stomach, small intestine, colon, omentum, spleen, liver, pancreas and kidney. Hedblom [10] found in the literature and in his Mayo Clinic series four cases involving the pancreas and one involving the kidney. Knagg [11] reported five cases in which pancreas entered into a diaphragmatic hernia. The great variability in the symptoms and signs, and the fact that in a considerable proportion of the cases the symptoms are only slight, make it a difficult matter to establish a clinical diagnosis without the aid of the roentgen rays; and even with the aid of the screen or roentgenogram the lesion is sometimes found only after several examinations. Spontaneous reduction of the hernia may occur just prior to the roentgen-ray study, thus contributing to diagnostic failure. Our own series of diaphragmatic hernias illustrates this point very well;

Fig. 3.—Authors' second case of retroperitoneal hernia. The colon is filled by the enema, the terminal ileum (shown by arrows), reaching upward toward retroperitoneal hernial sac.

10. Hedblom, C. A.: Diaphragmatic Hernia, J. A. M. A. **85**: 946 (Sept. 26) 1925.

11. Knagg, quoted by Freud, J., and Horner, E.: Fortschr. a. d. Geb. d. Röntgenstrahlen **29**: 201, 1922.

in one case the hernia was discovered only at the third examination, and in another the obstruction became acute and demanded operation within twenty-four hours after an examination in which no abnormality could be discovered, although all of the precautions later to be discussed were carefully observed.

The roentgen-ray diagnosis of diaphragmatic hernia demands the demonstration of the presence of part or all of an abdominal organ above the diaphragm. Eventration, relaxation and congenital elevation of the diaphragm mean a condition in which one half of the diaphragm is greatly stretched, its dome being pushed high up into the corresponding half of the thorax, so that a part of the abdominal contents occupies an unusually high position in the thoracic cage. Eventration, like hernia, usually affects the left side, but it

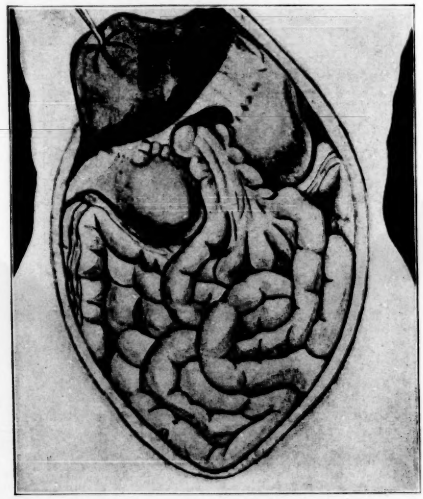

Fig. 4.—Drawing from Heaney and Simpson illust-ating hernia through transmesocolon into lesser peritoneal cavity, emerging through gastrocolic omentum.

may also occur on the right. In a few cases there has been found congenital absence of the diaphragm on one side. Such a condition is hardly compatible with life, but Beckman [12] records that one boy lived to the age of 17.

When a considerable portion of a hollow viscus, the stomach for instance, passes through a breach in the diaphragm into the thorax, it adjusts itself elastically to the surrounding parts on account of the excessive pressure within it. Its lower surface lies smoothly on the diaphragm, and above, it arches toward the lung, which yields before its pressure.

Generally, it is better to examine the patient in both the erect and the horizontal position. If one employs the erect position only, there is greater probability of failure. Only rarely does one detect a fluid level in the stomach or bowel lying above the diaphragm, and even if the opaque medium is administered with the patient standing, the hernia is often difficult to detect. Many times we employ an effervescent powder before giving the opaque material. If this is done with the patient erect, the rising gas generated by the mixture will clearly delineate the portion of the stomach that lies in the thorax. (Similarly, one may inject air into the rectum, to detect colon in the thorax.) One sees a high pocket or globus of air, bounded above by an arched line and below by a horizontal fluid level, which varies, depending on the degree of filling of the stomach. Great care and perseverance are required to make out the diaphragm beneath the air pocket, but it must be carefully sought, for exact determination of the line of the diaphragm is the chief point for differentiation between diaphragmatic hernia and eventration.

On the other hand, if the patient is examined in the supine or prone position, and especially if the opaque meal is administered while he occupies this position, the hernia will probably show. Especially helpful is a movement of straining by the patient while in this position; he should take a deep breath, and, while holding it, strain. This forces the diaphragm and liver downward so that there is afforded a better view of the lower end of the esophagus, and also increases the intra-abdominal pressure while simultaneously lowering the pressure within the thorax, thus favoring the entry of hernial contents into the opening. In addition, the examiner should employ the various oblique positions with the patient recumbent, the intention being to see the most favorable position for bringing the opaque medium to the cardiac orifice. Also useful is the Trendelenburg position, combined with the foregoing procedures.

Even with all these precautions it is quite easy to overlook a small diaphragmatic hernia, and it is always well to repeat the examination if there are any symptoms suggestive of such a lesion. There is sometimes stasis in the imprisoned organ, but this is rare; when found, it emphasizes the need of surgical treatment.

Careful routine observation of the fundus of the stomach by the technic just described will reveal not only the majority of diaphragmatic hernias but also the occasional case of carcinoma involving the fundus in the neighborhood of the cardiac orifice, a type of lesion all of us have found it so easy to overlook on the routine barium meal examination. It has been our custom for sixteen years to include in our routine study of the alimentary tract observations in the various oblique anterior and posterior positions.

Of course, such careful and detailed roentgen-ray study is not required to detect the large hernias of the diaphragm, for they are obvious at the very first glance with the fluoroscope. Most of our large hernias were detected in the routine brief fluoroscopic examination of the chest, to which every new arrival at the Battle Creek Sanitarium is subjected during the first twenty-four hours of his stay. Others were discovered during the routine barium meal study, but a few were found only after repeated examination in the effort to explain unusual symptoms. In the large hernias, the heart is usually displaced to the right.

Einar Key [13] cites a case of voluminous left diaphragmatic hernia, apparently congenital, and on the herniated stomach the typical roentgenographic signs of a gastric ulcer, which operation proved to be adherent to the pericardium.

Most stress has been laid on the stomach, for it is the viscus most frequently participating in a diaphragmatic hernia, being usually the first organ to enter.

12. Beckman, H.: Surg. Gynec. Obst., 1909, p. 154.

13. Key, Einar: Zentralbl. f. Chir. **51**: 95 (Jan. 19) 1924.

When, however, one finds that the circumscribed air pocket above the diaphragm which is thought to be hernia is not entirely filled by the opaque material in the stomach, even with the patient in the Trendelenburg position, the assumption is justified that intestine is also present above the diaphragm. In Hedblom's series of 343 cases in which the contents of the hernia were stated, in ninety-four the stomach was the only hollow viscus involved; in 101 there was colon or small intestine in addition to the stomach, and in eighty-six bowel alone was found in the hernia. In Knagg's series of fifty-three cases of diaphragmatic hernia involving the stomach, in forty-one there was also small bowel and in thirty-four large bowel in the thorax.

Following through the progress of the opaque meal will invariably answer the question thus raised. In some acute cases, the urgency of the symptoms may demand an early termination of the examination, in which case the examiner may proceed at once to the introduction of the opaque enema. In one of our recent cases, we discovered the left flexure of the colon in the hernia together with a portion of the fundus of the stomach, and were able to make this as a definite diagnosis with the roentgen-ray study. From the clinical history, there seemed to be definite indication of carcinoma of the colon proximal to the colonic obstruction in the hernia. Operation verified the roentgen-ray diagnosis and revealed in the enormously dilated transverse colon, just proximal to the incarcerated left flexure, an advanced carcinoma. A large section of the transverse colon was removed, and continuity restored by end-to-side anastomosis, with fixation of the shortened transverse colon to the abdominal wall.

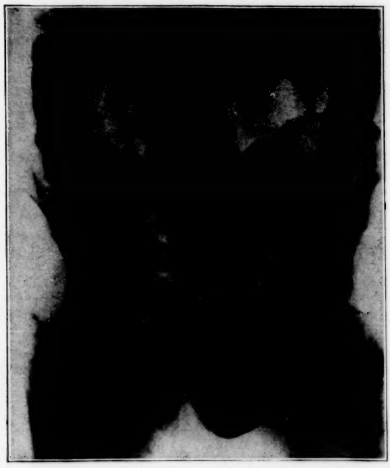

Fig. 5.—Sigmoid colon in left inguinal hernia.

There has been no recurrence of the hernia, and the patient was in good health a year later.

The roentgen-ray image of the stomach may show it divided into three parts. This is explained by the fact that when the stomach enters a breach in the diaphragm, other than the esophageal orifice itself, it is gradually rolled into the thorax along the greater curvature by aspiration, and the fundus finally draws part of the lesser curvature with it. The stomach may be thus divided into three parts: the first, adjacent to the cardia, lies below the diaphragm, its lower wall formed by the lesser curvature, or, if torsion has occurred, by the

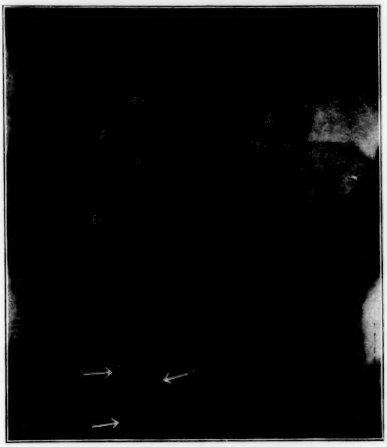

Fig. 6.—Terminal ileum, shown by arrows, in right inguinal hernia.

greater curvature; the second and largest part lies above the diaphragm, its upper wall formed by the greater curvature; while the third part is tensely stretched and extends from the hernial orifice to the pylorus, lying just beside or behind the first part. When the first part is distended with the opaque meal, we may be surprised at the apparent spectacle of an hour-glass stomach with both filling and emptying from the lower sac.

The diagnosis of diaphragmatic hernia depends on proof of the absence of the intact normal rounded dome of the diaphragm, with characteristic thoracic shadows above the rounded dome. The hernia having been discovered, it should be possible, especially with the patient in the erect position, to detect the air globus in the highest part of the gastric fundus within the thorax and to see through it the superimposed shadow of pulmonary markings characteristic of the base of the lung.

Herniation of the omentum or other solid organs, which occurred in about one sixth of the cases in Hedblom's series, is very difficult to determine by any means of examination. Pneumoperitoneum offers here the greatest prospect of success, and has been successfully used in the diagnosis of diaphragmatic hernia without any published ill results to the patient. We have never found it necessary to employ this procedure in diaphragmatic hernia, but can see no objection to its use in selected cases. It is especially helpful in the differential diagnosis of hernia and eventration, but before resorting to pneumoperitoneum one should carefully follow the technic suggested above in order to identify the hernial ring. Lateral screen and film studies are very important for this purpose.

Another procedure for differentiating hernia and eventration is the observation of paradoxical move-

ments of the diaphragm. This should be seen with hernia and not with eventration; but if the hernia is adherent, then it follows the movements of the diaphragm; and on the other hand, with a long standing relaxation of the diaphragm, the musculature may be so injured that it is incapable of contracting, and there

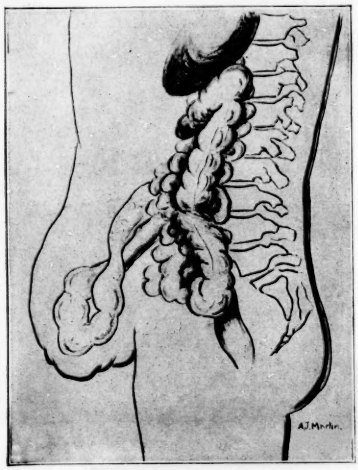

Fig. 7.—Diagram illustrating lateral appearance of ventral hernia containing small intestine, shown roentgenographically in figure 8.

is a resulting paradoxical movement. Phrenic nerve paralysis also gives the sign.

As a unique sign in eventration, several German authors have described a double contour of the arched line of the diaphragm, said to be formed by a stair-step formation of different segments.

In the differential diagnosis of diaphragmatic hernia, one must consider and rule out the following: eventration; diverticulum of the esophagus; hour-glass stomach; sacculated air or fluid and air in the chest; thoracic stomach; diverticulum of the stomach, and gastric ulcer causing cicatricial contraction with concomitant relaxation of the left diaphragm.

Eventration of the diaphragm has been sufficiently discussed in the preceding paragraphs. The differentiation is especially difficult when pleuritic adhesions have occurred about the hernia. Thus far, according to Freud and Horner,[14] no case has been reported of right eventration of the diaphragm with the stomach and intestine under the raised dome; hence, when this situation obtains, a diagnosis of hernia seems assured. The stomach usually retains its normal form in eventration on the left side.

Diverticulum of the esophagus is easy to confuse with a para-esophageal hernia, and a differentiation is not always possible. Haenisch,[15] especially, has written on this subject, citing several interesting and difficult cases. An epiphrenic diverticulum of the esophagus fills from and is attached to the esophagus, as will be shown by accurate observation at the moment of ingestion of the barium mixture. A small circumscribed dilatation of the cardiac orifice of the stomach may simulate diverticulum or hernia. By careful screen study, this dilatation will be seen to occur in the esophagus and above the diaphragm.

In the so-called thoracic stomach, the esophagus is shortened and never passes through the diaphragm, the stomach being found constantly in the thorax. Cunha[16] cites the case, and gives the results of the roentgen-ray examination, of a child, aged 4 months, with the heart and mediastinum in normal situation, but with an ectopic stomach situated in the right side of the chest. He states that when the stomach occupies the right side of the chest it is always a case of ectopia gastrica and not a diaphragmatic hernia.

The other items mentioned above as needing differentiation are self evident and require no further discussion here.

UMBILICAL, INGUINAL AND FEMORAL HERNIA

In the majority of umbilical and inguinal hernias, it is of course understood that the roentgenograms are not of great practical interest, constituting some interesting discoveries of secondary importance, though sometimes of great rarity. This is illustrated, for instance, when there is shown in the hernia a portion of the stomach or the appendix, especially when the latter is shown to be situated in a left inguinal hernia, or when one plans to remove the appendix in connection with operation for right inguinal hernia. We know of a case in which a surgeon sought in vain for the appendix through a small right inguinal hernia incision, for the very good reason, as shown by subsequent roentgen-ray examination, that the appendix was on the left side. Dreessen[17] found in the literature three cases of crural hernia and twelve of inguinal hernia involving the stomach, all being found at necropsy or operation except the case of Rieder, in which, thanks to the roentgen-ray study, the diagnosis was made

Fig. 8.—Ventral hernia containing small intestine as illustrated in diagram (fig. 7): Arrows indicate neck of hernial sac.

before operation. Dreessen adds another case, a personal observation, of a very much elongated bilocular stomach, the lower sac lying in an inguinal hernia. After operation, a control examination showed the

14. Freud, J., and Horner, E.: Fortschr. a. d. Geb. d. Röntgenstrahlen **29**: 201, 1922.

15. Haenisch, F.: Fortschr. a. d. Geb. d. Röntgenstrahlen (Kongressheft) **32**: 7, 1924; **30**: 62, 1923; **30**: 520 (April 14) 1923.

16. Cunha, Juan: Estómago ectópico en el emitórax derecho, An. de Fac. de Med. Montevideo **9**: 575 (July and August) 1924.

17. Dreessen, J.: The Presence of Stomach in an Inguinal Hernia, Zentralbl. f. Chir. **52**: 457 (Feb. 28) 1925; abstr. J. de Chir. **26**: 74 (July) 1925.

stomach in normal position, with its lower border only four finger breadths below the umbilicus.

Rueben [18] has reported a case of a subserous lipoma of the transverse colon incarcerated in the sac of an umbilical hernia, and cites fifteen other cases in which this anomaly was found, none of them being diagnosed

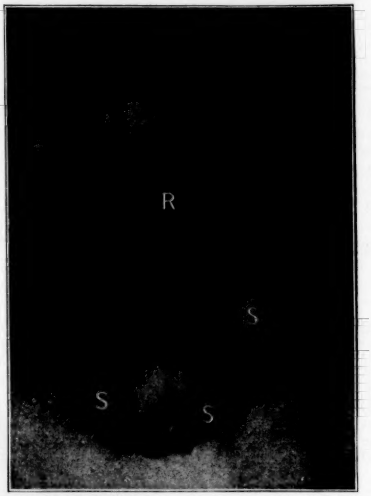

Fig. 9.—Multiple diverticula of sigmoid contained in left inguinal hernia: *S S S*, herniated sigmoid; *R*, rectum.

prior to operation. This shows one of the possibilities if one will use the roentgen-ray examination, especially employing the lateral position, as is illustrated in figure 7. Having determined that small intestine is in the hernial sac, especially through such a small opening as is evident in figure 8, the indication for operation is considerably more urgent than if the intestine within the hernial sac proves to be colon. An appendix in the hernial sac increases the surgical indication. We have observed acute appendicitis, with the appendix lying within a right inguinal hernial sac. One of our surprises was an extensive herniation of the sigmoid in an inguinal sac with multiple diverticula in the herniated sigmoid (fig. 9).

POSTOPERATIVE HERNIA

The roentgenographic examination with the opaque meal, or possibly with pneumoperitoneum, is a fairly constant indication in postoperative hernia that is suspected of causing trouble, especially where there is a history of recurring attacks of abdominal distress. There may be no actual emergence of abdominal contents, the hernia consisting of only a slight separation of the muscle at the site of the wound. In some of these cases we have made some very instructive observations, demonstrating beyond question the obstructive nature of postoperative adhesions, provided they do obstruct. Often, in these cases, the examination conducted during the free period between attacks gives no roentgenographic appearances out of the ordinary; but if it is possible to administer the opaque material (in water, not with a meal) and make the roentgen-ray study while the patient is experiencing the distress of an acute attack, the results are likely to be surprising. Figure 10 was made during an exacerbation of symptoms of recurrent intermittent intestinal obstruction, showing clearly the dilated loop of small intestine with retention of opaque material in the dilated loop, adherent to the anterior abdominal wall at the site of a small incisional hernia, whereas in the roentgen-ray study with the barium meal a few days before when the patient was in comparative comfort, nothing was found to suggest ahesions of the bowel or even low grade obstruction. When intermittent obstruction is suspected, as in the case just cited, roentgen-ray studies should be made hourly, beginning immediately after the barium meal, as long as there is any opaque material in the small intestine.

SUMMARY

A review of the results of operation or necropsy in several hundred cases of hernia involving abdominal contents reveals interesting possibilities in the way of roentgenographic diagnosis. The possibility of encountering hernia should be kept in mind during routine barium meal studies. Special technic is required by special types of hernia, such as diaphragmatic, retroperitoneal and postoperative hernia, in which the roentgen-ray study offers the greatest likelihood of affording useful information.

Fig. 10.—Obstructed terminal ileum, shown by arrows, due to adhesions of small intestine in postoperative ventral hernia.

ABSTRACT OF DISCUSSION

DR. JAMES C. MASSON, Rochester, Minn.: In regard to the ordinary types of hernia, umbilical, postoperative, inguinal and femoral, I hardly think the necessity of a roentgen-ray examination can exist in many cases, possibly with the exception of recurrent inguinal hernia in which the recurrence is in the form of an interstitial one. In some cases of fleshy patients it is very hard to tell whether a loop of bowel is incarcerated or not, but in those cases there is just as much

18. Rueben, M.: A Case of Subserous Lipoma of the Colon Transversum Incarcerated in the Sac of an Umbilical Hernia, Acta Chir. Scandinav. **53**: 339 (March 7) 1921.

danger of symptoms that the patient is having being due to incarceration of the omentum as it is for the bowel itself; but even in cases in which the bowel is present I can hardly see where a roentgenogram would be of much help, as surgery would be indicated anyway. In regard to diaphragmatic hernia, there is no denying that practically all cases should be diagnosed beforehand. It is very seldom that we see strangulation of hernia through the diaphragm. Examination of the patient should include a very thorough roentgenologic examination, which under proper interpretation should show the condition. In considering internal or retroperitoneal hernias, my experience has been limited to one paraduodenal hernia, one retrocecal hernia, and one hernia through the window of Winslow. The paraduodenal hernia was diagnosed accidentally during the course of an operation. Had the roentgenograms been properly interpreted, it should have been recognized. The great majority of paraduodenal and retrocecal hernias are congenital. These patients carry this type of hernia for many years, often with practically no disturbance.

DR. JAMES T. CASE, Battle Creek, Mich.: As Dr. Masson says, it is perfectly true that there is very little necessity for routine roentgen-ray examinations of hernia. Nevertheless, we sometimes have strange results in our barium meal work —very unusual arrangements of bowel loops—and it is necessary to know what they are and what we should be looking for. When a condition is rare, and we find it, it is all the more a credit to the radiologist, and it is only by knowing what these rare conditions are that we are likely to recognize them when we do encounter them in our work. It is curious how, as a rule, we see what we are looking for. In preparing my first report on duodenal diverticula, I went back through ten or fifteen thousand roentgen-ray plates of abdominal cases and I picked out ten or twelve cases that I had passed over unrecognized. We should be able to recognize retroperitoneal hernia. It is true that the retroperitoneal hernias do not have, in the majority of instances, symptoms demanding immediate attention as emergency operations; but by careful analysis of the symptoms one finds that most of them have digestive disturbances of a certain grade which have led to a previous diagnosis of chronic appendicitis, gallbladder disease, or something of that sort. The new points of my paper concern especially retroperitoneal hernias. What I have said about diaphragmatic hernia is important and not generally recognized; but a roentgen-ray study is especially valuable in the postoperative hernias even in those cases in which there is no actual hernial sac but only a simple separation of the muscle. In these cases, one often finds small intestine adherent to the thinned out scar of the abdominal wall and it is very important to be able to recognize which loop of intestine is adherent, whether large or small intestine, and whether or not the adhesion is causing obstruction.

The Real Doctor.—If we want the portrait of the real doctor we go, not to books, but to life. We expect him, not in vain, to combine with knowledge the understanding that springs from intuition till it is most richly reinforced by experience, to bear a tranquillizing influence, and to radiate confidence and hope. We expect him to exemplify, like the surgeon of whom Henley wrote:

> Faultless patience and unyielding will,
> Beautiful gentleness and splendid skill,

caring always for life as a thing most precious, quick—and now happily well able—to spare the sufferer one unnecessary pang, the restorer of health, a strong sure help in the more supreme moments:

> In many a house of care, when pain has forced a footing there,
> And there's a Darkness on the stair will not be turned away.

Such is the doctor, the family doctor, who is more to the public at large than the most learned and the most wise who dwell in those two long, unlovely, parallel streets of London, where the waters of healing are laid on at the main. The doctor's professional qualifications may change as medical science advances; the qualifications he needs to win him the confidence of his fellows are unchangeable as human nature itself.—Hogarth, R. G.: *Lancet* **2**:166 (July 24) 1926.

EXPERIMENTAL PRODUCTION OF ACUTE GLOMERULONEPHRITIS

USE OF ACTIVE PRINCIPLE OF SCARLATINAL STREPTOCOCCUS AND A CONSIDERATION OF CHRONIC INTERSTITIAL CHANGES: PRELIMINARY REPORT *

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AND
R. J. HIBBARD, M.D.
NEW ORLEANS

The present communication is to report briefly the results obtained in our efforts to induce nephritis in the rabbit with the active principle of the scarlatinal streptococcus. In a previous paper we [1] reported our experiments, which seemed to prove that the toxic moiety of *Streptococcus scarlatinae,* at least for the rabbit, is intimately bound up in the protoplasm of the bacterial cell, and is therefore endotoxic in character. With this toxic substance we have succeeded in producing in the rabbit the acute glomerular lesions that occur in the kidneys of human scarlet fever. In this

Fig. 1.—Section of rabbit kidney showing early vascular lesion of glomerulonephritis.

connection we can say with assurance that the acute stage of renal change in this animal is caused by a protein intoxication, and not by the presence in the tissues of the streptococcus itself.

The streptococcal toxic substance employed by us in the production of acute glomerulonephritis was secured either through the medium of the peritoneal cavity of the immune rabbit, or by the in vitro method of treating the culture with activated homologous immune serum. The Berkefeld filtrate of the peritoneal lysate and the serum-treated culture contain the endotoxic product of the split streptococcus. Here it should be mentioned that we have been unable to infect the rabbit with large doses of the living streptococcal culture (Dick's "Tyler" and "Harrison" strains), or to produce in this animal symptoms of toxemia with the culture-filtrate of nutri-

* From the Department of Pathology, Tulane University of Louisiana School of Medicine.

1. Duval, C. W., and Hibbard, R. J.: Proc. Soc. Exper. Biol. & Med. **23**: 830, 1926.

ent grown bouillon organisms. On the other hand, acute nephritic lesions occur in the nonimmune rabbit following the injection of a sublethal or fatal dose of endotoxin. Likewise, glomerulonephritis is induced in the immune rabbit injected with a sufficiently large dose of the endotoxin. Acute glomerulonephritis is also occasioned in the immune rabbit by the injection of a single large dose of the living homologous culture.

It would seem that the mode of production of the acute nephritis in the two instances is the same. In the case of the normal animal that develops glomerulonephritis following the injection of streptococcal "lysate," no lytic action on the antigen is necessary, since the lysate is the toxic split product and is free to act on the kidney. In the instance of the immune animal, the introduced living culture is immediately split by some lytic substance developed in the host during immunization, causing the liberation of the streptococcal endotoxin, which in turn affects the kidney. It

Fig. 2.—Section of rabbit kidney showing hyaline thrombi in vessels of tuft.

is necessary, however, that there be an excess of split product over and above what may be neutralized by antitoxin if nephritis is to occur in the immune animal. To insure this excess a large dose of culture must be employed, but not in amount that will cause sudden death of the animal from toxemia.

PATHOLOGY

The experimentally induced lesion is essentially an acute glomerulonephritis. The rabbit kidney is markedly swollen, pale or red and mottled with elevated yellowish gray flecks and petechiae in the cortical substance which corresponds to the location of the glomeruli. The organs are frequently a third larger than the normal kidney, and the two are about equally affected.

Microscopically, the changes that occur in the kidney of experimental scarlatinal nephritis range from an active hyperemia of the vessels of the glomeruli, proliferative changes of the tuft endothelium and Bowman's epithelium, to complete necrosis of the malpighian bodies. In some of the rabbits, every capillary whorl in a section is the seat of lesion. The earliest histopathologic change is noted for the vessels of the

Fig. 3.—Experimental scarlatinal nephritis in the rabbit: hemorrhage into Bowman's capsule and extending into corresponding tubule.

tufts in the form of hyperemic engorgement, which results in a marked dilatation of the vascular loops and a concomitant extravasation of serum into the capsular space (figs. 1-4). Actual rupture of the distended tufts often occurs, and in consequence there is hemorrhage into Bowman's capsule (fig. 3). The blood in

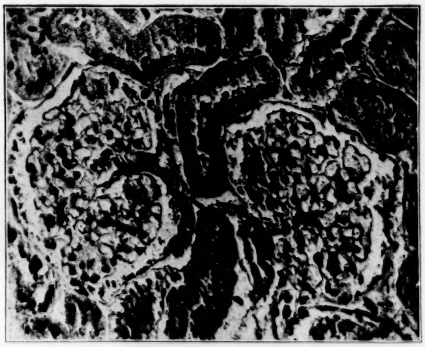

Fig. 4.—Section of rabbit kidney showing acute glomerulonephritis: swollen and distorted tufts; serum extravasation into Bowman's capsule.

part finds its way into the corresponding tubule, where it appears as casts. In this stage of the acute nephritis it is common to find numerous large and small hyaline thrombi distending the capillary loops of the tufts. These thrombi appear more frequently in the efferent

vessels of the glomerular whorl (fig. 2). Another common lesion noted for the glomerular vessels is an increase in the number of endothelial cells. These cells are not in evidence for tufts in which shrinkage and

Fig. 5.—Section of rabbit kidney of experimental scarlatinal nephritis: glomerular lesions; increase in number of endothelial cells.

Fig. 6.—Experimental scarlatinal nephritis in the rabbit, showing early crescent formation of Bowman's epithelium.

complete disintegration have occurred, Bowman's capsule then containing only the necrotic remains of vessels and their lining endothelium. For some glomeruli the necrotic tuft appears shrunken, in shadowy outline, and eccentrically displaced by collections of serum, blood clot or "crescentric" masses of proliferated capsular epithelium. Neutrophilic elements of acute inflammation are conspicuous by their absence in any of the glomerular lesions.

Still another significant change occurring in the affected glomeruli is the formation of the "epithelial crescent," which invariably begins in the tubule portion of the capsule and in consequence causes a complete blocking of the entrance to the latter. This occlusion by proliferated epithelium is noted for glomeruli in

Fig. 7.—Experimental scarlatinal nephritis in the rabbit, showing destruction of the malpighian body.

which the tuft seems, in part at least, capable of function (fig. 6).

Tubular changes are not an early feature of the acute parenchymatous nephritis. Often no epithelial alterations are observed except where the corresponding glomerular tuft is apparently destroyed. In these instances the tubule shows a swollen and granular condition of the lining epithelium, particularly of the

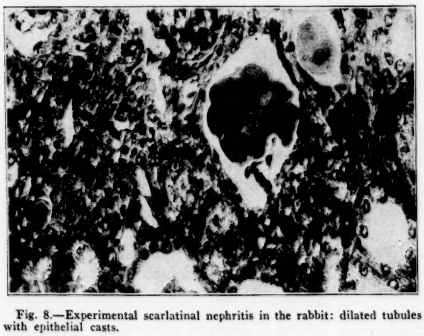

Fig. 8.—Experimental scarlatinal nephritis in the rabbit: dilated tubules with epithelial casts.

convoluted portion. At this stage, desquamation of tubular epithelium and its appearance in the form of casts is frequently noted (fig. 8).

In certain of our experiments in which one of the rabbits previously immunized against the hemolytic streptococcus of scarlatina died as a result of a subsequent injection of the homologous "lysate," chronic interstitial lesions were noted in the kidneys (figs. 9, 10 and 11). These chronic changes were essentially reparatory and undoubtedly the sequence of some pre-

vious injury to the parenchyma. Whether the primary glomerular injury induced experimentally with the streptococcus may inaugurate secondary chronic changes in the stromal tissues can only be conjectured at this writing. Although we have never observed in our laboratory experiences the occurrence of spontaneous chronic diffuse nephritis in the rabbit, we understand that this condition may occur in this animal. Further experiments in which the chronic lesions occur regularly under specific conditions are necessary before any conclusions can be drawn regarding the specificity of the interstitial change or its relationship to the acute glomerular nephritis experimentally produced with *Streptococcus scarlatinae*.

Fig. 9.—Rabbit kidney of chronic interstitial nephritis.

SUMMARY

The various types of acute glomerulonephritis, including the epithelial "crescent," endothelial proliferation, hyaline thrombi in the vessels of the glomeruli, hemorrhage into the capsular space, and complete necrosis of capillary tufts, can be produced experimentally in the rabbit under prescribed conditions, with the toxic principle of the scarlatinal streptococcus of the Dicks.

The experimental production of the nephritis here reported is of unusual significance, since it affords the opportunity to study the acute lesions in the order of their related sequence, and may form a means of tracing the changes that lead to a progressive diffuse nephritis. Furthermore, it opens a field of investigation that may lead to our better understanding of the causes and mode of production of certain forms of renal disease in man.

Streptococcal nephritis induced in the rabbit, and its complete analogy to the nephritic lesions of human scarlatina, is of especial interest since the causal excitant is in keeping with injurious substances more likely responsible for nephritis in man. While experimental nephritis has been produced with substances such as cantharides, snake venom and uranium, these are improbable excitants of the human disease and for this reason have not afforded an accurate basis for comparative study.

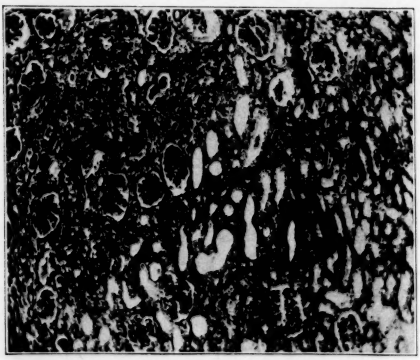

Fig. 10.—Section of rabbit kidney of chronic interstitial nephritis.

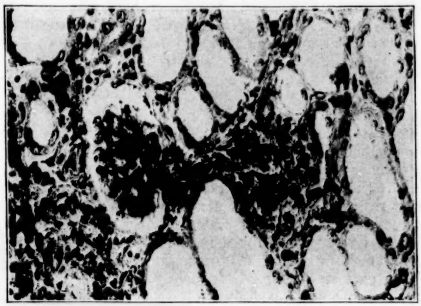

Fig. 11.—Section of rabbit kidney showing dilated tubules and glomeruli undergoing organization.

AVITAMINOSIS IN THE COURSE OF DIABETES

OCCURRENCE IN A CASE, WITH SYMPTOMS AND LESIONS OF BERIBERI PREDOMINATING *

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OMAHA

Among the many diseases classified as avitaminosis, beriberi and keratomalacia have received considerable attention from both the clinical and the experimental points of view. Although the exact determining cause of beriberi has not been absolutely proved, there seems to be a unanimity of opinion that vitamin deficiency in food is an essential if not the sole factor in its genesis. The human feeding experiments with decorticated rice conducted by Fraser and Stanton [1] would indicate this; and animal experiments conducted by Eijkman in Java [2] have established the fact that polyneuritis gallinarum in fowls, which is analogous in a number of symptoms to human beriberi, results from a deficiency of neuritis-preventing vitamin in decorticated rice.

The classic experiments of E. V. McCollum [3] and his co-workers, Osborne and Mendel,[4] have established that keratomalacia is essentially a disease following a lack of the fat-soluble vitamin A.

In this country, patients presenting symptoms of beriberi or of keratomalacia are rather uncommon. In view of the great number of patients who are on restricted diets, this is somewhat surprising. I feel,

* Read before the Section on Pathology and Physiology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Fraser and Stanton: Institute for Medical Research Federated Malay States, 1909, No. 10.

2. Eijkman, quoted by Vedder, in Tice: The Practice of Medicine **9**: 189.

3. McCollum, E. V.: Pathologic Effects of Lack of Vitamin A and of Antirachitic Vitamin, J. A. M. A. **81**: 894 (Sept. 15) 1923.

4. Osborne, T. B., and Mendel, L. B.: Ophthalmia and Diet, J. A. M. A. **76**: 905 (April 2) 1921.

however, that there must be a greater number of cases that show individual symptoms of these diseases, but they pass unrecognized as such.

That an occasional symptom of avitaminosis may develop during the course of a strict dietary regimen was recently stressed by Crohn and Rosenberg,[5] Schwartz [6] and McCarrison.[7] Crohn and Rosenberg observed in two patients who were suffering from ulcerative colitis, and who were on a diet restricted to vegetables soups, cereal gruels and meat broth, the development of corneal and conjunctival inflammation similar to xerophthalmia, a condition due to a deficiency in fat-soluble vitamin A. They attributed the ocular phenomena to avitaminosis because the patients promptly recovered from xerophthalmia on a changed diet. Schwartz reported a case of an infant whose diet was restricted for therapeutic purposes to oatmeal water and Mellin's Food in water. This constituted the entire diet regimen for a period of twenty-two days. Characteristic symptoms of keratomalacia developed. The patient recovered following the administration of cod liver oil.

McCarrison states that:

> Disturbances of metabolism resulting from avitaminosis are bound up and are in a considerable measure dependent on disturbances of endocrine function which result from the same cause. Evidence has been advanced of the deleterious effects of food deficiencies on the organs responsible for digestion and assimilation. The endocrine organs influence those of digestion both by their hormones and through the sympathetic nervous system. Food deficiency deranges both the normal production of hormones and the functional perfection of sympathetic nervous control. Consequently the digestive organs are deprived of the full advantage of the efficient regulation and correlation which normally they would derive from normal, healthy endocrine action.

I have studied both the clinical and the postmortem records of a patient that came under my observation who developed during the course of a restricted diabetic diet the cardiac-neurotoxic complex to analogous beriberi and the eye symptoms suggestive of xerophthalmia. The case will be described in detail below.

Based on the study of the literature pertaining to the subject, and on the careful investigation of our case, a few points suggested themselves, deductions from which seem sufficiently cogent to merit mention here. They are at present of theoretical character, however, and I expect in the future to subject them to experimental proof.

THEORETICAL ASPECT

There occur certain symptoms during the course of diabetes which we have heretofore attributed to the diabetic condition which cannot reasonably be explained by the disease as such. In treatment we have focused our attention on the fundamental food categories—protein, carbohydrate and fat—and have paid little attention to vitamins and inorganic substances, such as iron, calcium and phosphorus. Since diabetes is a protracted condition, and since a diet must be continued for a long period, it may, if insufficient in vitamins and inorganic substances, give rise to symptoms of avitaminosis in masked form.

Take, for example, the extreme muscle weakness that forms a conspicuous symptom in many cases of diabetes. The daily loss of sugar and nitrogen, with the resultant loss of "calories" would hardly serve as a logical explanation for the same. We have often seen patients whose carbohydrate tolerance was not low, yet whose asthenia was most marked. Allen [8] believes that the asthenia is an evidence of a specific endocrine deficiency.

The recent work of McCarrison,[7] Mouriquand,[9] and Wolbach and Howe [10] has established that food deficient in vitamins will produce marked histologic changes in animal organs. Wolbach and Howe's specific tissue changes consisted in replacements of various types of epithelium by stratified squamous keratinizing cells. Atrophy of the glands of internal secretion, with hypertrophy of the suprarenals, is a striking phenomenon demonstrable histologically.

Fig. 1.—Appearance of patient on deficient diet for a year.

The deficiency need not necessarily be complete. Partial deficiency, when protracted over long periods, acts just as certainly as extreme deficiency over short periods. Is it not possible, then, that the symptoms of asthenia could be accounted for on the basis of histologic changes induced by avitaminosis in endocrine glands?

The neurologic signs and symptoms of diabetes have not been adequately explained. Williamson,[11] Schweiger [12] and Kraus [13] find a degeneration of part of the intramedullary portion of the posterior roots as the anatomic cause. Of eighty cases studied in the diabetes department of Mercy Hospital, Council Bluffs, Iowa, and the Paxton Memorial Hospital, Omaha, from July 1, 1924, to Dec. 1, 1925, we have encountered twenty-two patients with symptoms of paresthesia, partial loss of knee jerks, and neuralgic pains, particularly in the calves. Only in one instance did we find a true multiple neuritis with atrophy of muscles and complete loss of knee jerk and Achilles reflex.[14] Ten of these patients had acetone in the urine, and all of them presented hyperglycemia; the cases varied in duration from three to six years. A careful inquiry into the dietary habits of the twenty-two patients, preceding or following the diagnosis of diabetes, disclosed the striking feature in sixteen of them that they consumed food poor in vitamins, such as potato, bread and meat, but very little of fresh vegetables, eggs and cream. Focal infection, alcohol, syphilis or tuberculosis as causes of neuralgic pains were ruled out, with the exception of tuberculosis in one case and syphilis in another. Is it not possible that the neuralgic pains were due to a disordered metabolism of nerve cells, with more extensive degeneration incident to avitaminosis when continued for too long a time? The acidosis

5. Crohn, B. B., and Rosenberg, Herman: The Medical Treatment of Chronic Ulcerative Colitis, J. A. M. A. **83**: 326 (Aug. 2) 1924.
6. Schwartz, A. B.: Nutritional Keratomalacia, J. A. M. A. **85**: 2025 (Dec. 26) 1925.
7. McCarrison: Deficiency Diseases, Oxford Medicine Press.
8. Allen, F. M.: Am. J. M. Sc. **161**: 350 (March) 1921.
9. Mouriquand, G.: Presse méd. **33**: 1473 (Nov. 7) 1925.
10. Wolbach, S. B., and Howe, P. R.: J. Exper. Med. **42**: 753 (Dec.) 1925.
11. Williamson: Brit. M. J., 1894, p. 398; Lancet **1**: 855, 1905.
12. Schweiger: Arb. a. d. Neurol. Inst. a. d. Wien. Univ. Obersteiner, 1908, p. 391.
13. Kraus, W. M.: M. Clin. N. America, 1920-1921, p. 228.
14. No attempt is being made here toward a neurologic classification of these cases.

or hyperglycemia might hasten the symptoms by overloading the oxidative mechanism.

Constipation is a common symptom of which patients with diabetes complain. It is true that the insufficient bulk of food and the polyuria, causing the abstraction of water from the gastro-intestinal tract, leaving the fecal contents in a dry state, might account for this symptom in some of the cases. However, there are patients in whom under proper care the polyuria diminishes, who take a large bulk of food, who exercise, and who still present constipation as a persistent symptom. Sir Arthur Keith [15] has called attention to two anatomic factors of primary importance in chronic intestinal stasis, occurring in food deficiencies: (1) the defective action on the part of the abdominal musculature, and (2) the lesions of the neuromuscular system of the intestine. The histopathologic changes occurring in deficiently fed pigeons and monkeys would indicate an atrophy of muscle tissue, as well as a disorder function or actual degeneration of the nervous tissue throughout the body. The abdominal muscles and the nerve elements controlling them necessarily suffer as well. Gross [16] found that vitamin B deficiency produces in rats real intestinal stasis. The most remarkable point in his experiments is that the intestine seems to feel the need of vitamin B almost immediately. The idea that constipation in diabetic patients is possibly dependent on the improper food rather than the diabetic condition as such is not inconsistent with the foregoing facts.

Fig. 2.—Swelling of knees and ankles.

In accordance with this line of reasoning, we have given Yeast Vitamin B Concentrate (Harris), a total of 800 mg. of the Osborne and Wakeman yeast fraction daily to each of eight diabetic patients that were suffering with obstinate constipation. The results obtained are encouraging; however, these patients are still under observation.

Another speculative point which one may entertain is the rôle that changed conditions with respect to food habits (consumption of rich but vitamin deficient food) play in the increase in the incidence of diabetes. In the United States, sugar consumption (largely sucrose) has increased from 35 pounds (16 Kg.) per person in 1890 to 100 pounds (45.4 Kg.) in 1910.[17] The assumption that by the increase in the carbohydrate intake the pancreas is overburdened and that to this cause may be traced the increase in the incidence of diabetes does not find support in the incidence of diabetes in Japan. The Japanese live on a diet of rice and barley, and Joslin [18] states that the disease is not only less frequent but milder in that country than in ours. May it not be true that it is not the amount of carbohydrate but the form in which we consume it (poor in vitamins) that is one of the many causes for the increase in diabetes with us? Though rice and barley constitute the principal foods of the Japanese, yet the most popular legume in Japan is the soya bean, rich in vitamin B. The lack of vitamins in food, moreover, has a depressant effect on the functional capacity of the pancreas. Funk and von Schoenborn [19] have found a hyperglycemia and a shortage of glycogen in the livers of pigeons suffering from beriberi. They also observed that the administration of yeast tended to lower the blood sugar and increase the store of glycogen in the liver. Gross [16] found no evidence of hyperglycemia in rats fed with a vitamin B deficient diet; however, he confirmed the findings of Funk and von Schoenborn as to the definite effect of vitamin B deficiency in the glycogen content of the liver. Funk [20] suggested that antiberiberi vitamin plays some part in carbohydrate metabolism. An interesting observation has recently been made that for complete oxidation of carbohydrates a sufficient amount of vitamin is necessary. Cooper and Braden [21] have demonstrated that in order to prevent the occurrence of polyneuritis in birds there must be a quantitative relationship between the carbohydrate consumed and the amount of vitamin present in the food.

Kepler,[22] in a recent report of a case of beriberi following excessive use of gloss starch for a period of two years, draws an analogy between beriberi and diabetes:

> In diabetes, a definite amount of carbohydrates must be metabolized to prevent the development of acidosis. To prevent the development of beriberi, a carbohydrate diet must be supplemented with a definite amount of vitamin substance. In other words, the water soluble B vitamin is to carbohydrate metabolism what glucose is to fat metabolism.

The work of Desgrez, Bierry and Rathery [23] has a direct bearing on this. They found that the addition of vitamin B to the diet of patients with diabetes prolongs and increases the effect of insulin.

REPORT OF CASE

History.—Miss N., white, of Danish descent, aged 32, unmarried, referred by Dr. John Holst for relief from her extreme weakness and severe diabetes, had taught school up to six years before, and had enjoyed good health. In the summer of 1919, while her parents were away on a vacation trip, the girl was frightened, and felt indisposed. When her parents returned home she had a rising temperature and complained of diarrhea. This lasted for about a week. She improved and resumed teaching school the same season. During the winter session she began to lose weight, and was extremely fatigued and nervous. She consulted a physician, who found a large amount of sugar in the urine.

The patient was placed on a diet from which the high carbohydrate foods—potato and bread—were eliminated. She continued to show glucose in the urine. With the discovery of insulin, the patient consulted another physician, who placed her in a hospital, began the administration of insulin, and ordered a diabetic diet based on proper principles. She continued to show glucose in the urine and lost ground. The patient received insulin for six months, the daily dose varying between 15 and 25 units. She became extremely nervous and irritable, particularly after insulin administration. The mother discontinued the use of insulin, the patient not being

15. Keith, Arthur, quoted by McCarrison, p. 224.
16. Gross: J. Path. & Bacteriol. **24**: 45, 1924.
17. Emerson, Haven, in discussion on Joslin, E. P.: Changes in the Diabetic Clientele, abstr. J. A. M. A. **82**: 1888 (June 7) 1924.
18. Joslin: Treatment of Diabetes Mellitus, Lea & Febiger, 1923, p. 145.
19. Funk and von Schoenborn: J. Physiol. **48**: 328.
20. Funk: J. Physiol. **53**: 247.
21. Cooper and Braden, in Nelson: Loose-Leaf Medicine, New York **3**, 1921.
22. Kepler, E. J.: Beriberi from a Diet of Raw Starch, J. A. M. A. **85**: 409 (Aug. 8) 1925.
23. Desgrez, A.; Bierry, H., and Rathery, F.: Compt. rend. Acad. de sci. **89**: 25 (Jan. 2), 424 (April 17) 1923.

under medical supervision at the time. She continued to give her daughter a diet of about 800 to 900 calories, never exceeding 1,000. The mother, having been taught in the hospital something about diets, restricted the food intake every time she found that the urine contained sugar. The main articles of diet were cereals, such as rice; occasionally eggs and chicken; canned vegetables; small amounts of milk, and butter.

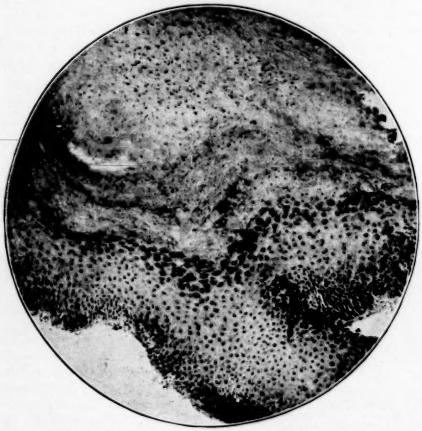

Fig. 3.—Hyperkeratosis of mucous membrane of gum.

The patient received this diet for a year. She lost 50 pounds (23 Kg.) from the beginning of her illness. Six months prior to the time I first saw her she began to complain of pain in her muscles, particularly of the lower extremities. She had "muscle soreness" (as she put it), and heaviness of her legs. She also developed nausea and occasional vomiting, with epigastric distress. She became weak and unable to walk, and took to bed about two months previous to the time I first saw her.

Physical Examination.—The patient was confined to bed. Her mother stated that she was unable to walk without assistance. She was extremely emaciated. Her face was of whitish, slightly cyanotic, tinge. She had a pinched appearance. The right cheek was edematous. She refused to open her eyes because of pain caused by light.

The skin of the extremities was moist and very sensitive to touch. The finger nails were brittle. The subcutaneous tissues over the tibias were edematous. The ankles were swollen.

On examination (by Dr. Holst) the eyes showed opaque, dull, dry corneas. The mother said that when the patient cried, tears did not appear. The lower eyelids on both sides were edematous, the mucous membrane pale and dry. The patient was unable to distinguish correctly objects held before her. The pupils responded to light and in accommodation. The mother stated that ten days previously there was a watery discharge from the eyes.

The lips were poor in color. The teeth were normal. The mucous membrane of the mouth and pharynx was pale and dry. Along the margin of the lower gums there were gray-white patches resembling leukoplakia. The tonsils were small and buried.

No pulsations were visible in the neck. The thyroid seemed normal.

The examination of the heart showed the apex beat in the sixth intercostal space in the midclavicular line. The entire chest heaved with the cardiac pulsations. The heart sounds were rapid and distant. The right border of the heart was 3 cm. to the right of the midsternal line. The left border was slightly to the left of the midclavicular line. At the apex there was heard a soft systolic murmur, not transmitted. The second sound was reduplicated.

The lungs showed no pathologic findings, except a few moist râles at the base of each side.

The abdomen was tender, particularly in the epigastric region. Moderate ascites was detected. The liver was enlarged, one fingerbreadth below costal margin. The spleen was not palpable.

Mentally the patient was dull and listless, and she refused to talk or answer questions. The muscles were wasted and there was a loss of power in both hands and feet. She had to be helped to turn over in bed. The patellar and Achilles reflexes were abolished. Pressure over the calves of the legs and over the muscles of the arms, especially when pressing over the nerve trunk, caused intense pain. (Dr. G. E. Neuhaus made the neurologic examination.)

The temperature was 37 C.; the pulse, 110 per minute; the blood pressure: systolic, 90; diastolic, 60.

Laboratory Examination.—Hemoglobin totaled 60 per cent, Dare; erythrocytes, 2,800,000; leukocytes, 4,200; polymorphonuclear neutrophils, 67 per cent; large lymphocytes, 20 per cent; small lymphocytes, 13 per cent. The erythrocytes showed achromia and poikilocytosis. A blood count taken a week later showed: hemoglobin, 65 per cent; erythrocytes, 2,900,000; leukocytes, 5,400; polymorphonuclear neutrophils, 65 per cent; large lymphocytes, 15 per cent; small lymphocytes, 20 per cent; clotting time, six minutes. The blood sugar was 270 mg.; urea nitrogen, 32 mg.; creatinine, 2 mg. per hundred cubic centimeters. The carbon dioxide combining power of the blood (Van Slyke) was 50 cc. per hundred cubic centimeters of blood plasma. The blood Wassermann reaction was negative. The urine was of straw yellow color; specific gravity, 1.028; reaction, acid; albumin, negative; glucose, 2.5 per cent; acetone and diacetic acid, positive. Microscopic examination showed a few leukocytes and a few epithelial cells.

Diagnosis and Clinical Course of Disease.—The patient's condition was diagnosed as diabetes mellitus, complicated by

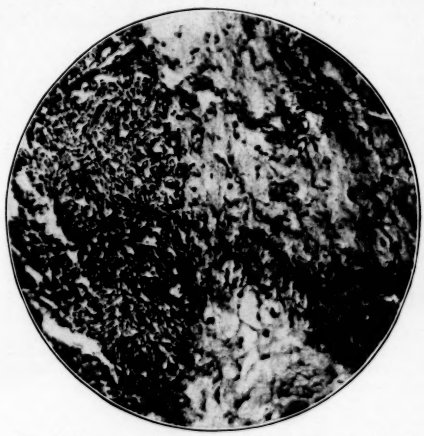

Fig. 4.—Edema of pericardium, hydropic degeneration and fragmentation of heart muscle.

avitaminosis.[24] It was necessary to rule out scurvy. The absence of hemorrhages in the form of petechiae or ecchymoses in the skin and subcutaneous tissue, the absence of the spongy, bleeding gums, spoke against it. "Famine edema" could be

24. V. L. Levine, Ph.D., professor of nutrition at Creighton Medical College, with whom I discussed this case, suggested beriberi as the type of avitaminosis.

ruled out because in the latter there are no typical polyneuritic symptoms and polyuria is frequent. The patient was placed on a regular diabetic regimen with 10 units of insulin before each meal. The food was arranged so as to have a variety of leafy vegetables, fruit, eggs, milk, beans, butter, cream, and in addition Yeast Vitamin-Harris, one tablet twice a day, and cod liver oil, 10 minims (0.6 cc.) three times a day, were given; the former tablets containing, according to analysis of E. M. Bailey,[25] 200 mg. of the Osborne and Wakeman yeast fraction and 300 mg. of dried milk powder. From 20 to 30 mg. of the Osborne and Wakeman fraction per white rat

Fig. 5.—Vagus nerve: myelin gathered into large irregular globules (staining black with Marchi's stain).

daily furnished the necessary vitamin B for normal growth, without other source of vitamin B in the diet. The patient's diet was gradually brought up to 1,900 calories, consisting of protein, 65 Gm.; carbohydrate, 70 Gm., and fat, 140 Gm. The patient began to show improvement. The eye condition cleared up. The patches of leukoplakia improved. She was able to take a few steps with some assistance. The pulse slowed down to 90. Her improvement continued for two months. The urine showed sugar from 0.2 to 0.5 per cent. The blood sugar was reduced to 180 mg. The red blood cells increased to 3,600,000; hemoglobin, 70 per cent. At this stage her mother discontinued the use of insulin, being prejudiced against it. The patient began to have large quantities of sugar and acetone in the urine. She died, Oct. 2, 1925.

Postmortem Examination.—The examination[26] was held twelve hours after the patient's death. Rigor mortis was marked. The skin was smooth, yellowish white, and rather dry. On the anterior surface of the chest and on the back there was an ecchymotic area the size of a silver dollar. The ankles were swollen. The subcutaneous fat had disappeared. The muscles of the legs were wasted, as were also the muscles of the chest. The muscles presented a dull, grayish appearance. The conjunctiva was roughened; the cornea, somewhat clouded. The mucous membrane of the mouth was dry. There was a leukoplakic spot, 18 mm. in diameter, on the margin of the gum. The peritoneum was somewhat thicker than normal; it was quite edematous. The cavity contained 900 cc. of fluid. The appendix was 3 cm. in length, and had a rather small mesentery to its tip. Each pleural cavity contained 80 cc. of clear, straw-colored fluid. Otherwise, they were normal.

The pericardial cavity contained 50 cc. of clear, straw-colored fluid.

The epicardium was edematous. The heart weighed 250 Gm. It was rather flabby. The edges of the mitral valve were slightly edematous. The myocardium had a general dull appearance. The wall of the left ventricle was thickened, measuring 12 mm. in diameter. The wall of the right ventricle was rather thin, measuring 2 mm. in diameter. The valves of the right side of the heart were normal. The coronary arteries were normal.

The lungs showed marked edema and moderate congestion. No nodules were present.

The spleen weighed 140 Gm. The surface was wrinkled. On section, the surface was dark red. The malpighian bodies were not prominent. Trabeculae were visible.

The liver weighed 1,700 Gm. The surface was smooth, and on section the surface was light reddish brown. The consistency was somewhat increased. The gallbladder and ducts were normal.

The mucosa of the gastro-intestinal tract was somewhat injected, but otherwise normal.

The pancreas weighed 30 Gm. It measured 11 cm. in length, 1.5 cm. in breadth, and about 1 cm. in thickness. The surfaces were smooth. It was dull gray.

The combined weight of the kidneys was 300 Gm. The capsules stripped off easily, leaving a smooth congested surface. The cortex of the kidney was 1 cm. thick, and deep red. The glomeruli were distinct. The pyramids, pelvis and ureters were normal. The combined weight of the suprarenals was 11 Gm. They were surrounded by very little fat.

The bladder contained 100 cc. of clear, straw-colored urine.

The ovaries were small and atrophic, and somewhat firm. The tubes were smaller than normal. The uterus was small, measuring 4 cm. in length; the mucosa was congested.

The arch of the aorta showed scattered atheromatous areas, varying in size from the point of a lead pencil to about 18 mm. The abdominal aorta showed similar yellowish, elevated plaques.

The vagus and phrenic nerves were removed very carefully for microscopic section. The brain and spinal cord were not examined.

Microscopic Examination.—Tissue from the margin of the gum showed proliferation of squamous epithelium, with marked hyperkeratosis (fig. 3).

In the pericardium, there was marked separation of the collagen fibers, with many clear spaces.

In the myocardium, the muscle cells were small; a large number of them were vacuolated (hydropic degeneration); there was fragmentation of the muscle fibers with longitudinal separation of the bundles, due to edema (fig. 4).

There was distinct thickening of the intima of the aorta, with poorly staining basophilic material in intima and media.

The lung alveoli were filled with fluid (coagulated by a fixing agent). The epithelial cells lining the alveoli appeared large, almost cuboidal in type.

There was an increased amount of fibrous tissue in the capsule and reticulum of the spleen; the medulla was hyperplastic; there was distinct congestion of the splenic sinuses. There were seen a number of macrophages filled with pigment.

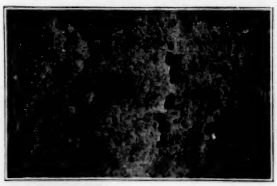

Fig. 6.—Phrenic nerve: rather advanced degeneration of myelin (Marchi's stain).

There was edema of the interstitial connective tissue of the liver; the sinuses were distended with red blood cells; otherwise the liver was normal.

Sections from the periphery of the pancreas showed areas of degeneration. Sections from the central parts showed an increase in the interacinous connective tissue; the connective tissue was edematous. A striking feature of sections from the pancreas was the diminution in the number of islands of Langerhans; some of the islands were converted into hyaline masses in which no cells could be detected. The acini were collapsed. The acinous epithelium showed no changes.

The glomerular capillaries of the kidneys were congested; there was edema of Bowman's capsules. The intertubular connective tissue was not increased. There was a striking

25. Bailey, E. M.: Bull. 240, Connecticut Exper. Station, p. 46.
26. Drs. A. V. Hennessy and F. H. Foucar, who had had experience with beriberi and war edema, respectively, were present at the postmortem.

vacuolization of the epithelium of the tubules. The renal interlobular artery showed thickening of the intima, with poorly staining material in the media.

Pathologic examination of the vagus and phrenic nerves was done by Thomas L. Houlton, assistant in neuropathology, Creighton Medical School. The vagus nerve, with Marchi stain, showed marked beginning degeneration of many but not all of the fibers; the myelin sheaths were swollen, and the myelin was gathered into rather large irregular globules staining more or less black (fig. 5). In most sections the phrenic nerve showed a degeneration of the myelin quite similar to that of the vagus nerve, except for some sections in which the degeneration was more advanced, the droplets having condensed and being gathered into beads or chains (fig. 6).

COMMENT

The wasting of the muscles, the presence of fluid in the serous cavities, and the degeneration of the phrenic and vagus nerves with the clinical picture speak for a condition analogous to beriberi. The eye condition suggests xerophthalmia as seen in deprivation of fat-soluble vitamin A. When a supply of vitamin A and B was added to the patient's diet, the symptoms disappeared and those of beriberi improved.

It is true that in human beriberi the heart is as a rule enlarged; yet, considering the fact that the patient had been under active treatment with vitamin B for more than two months, and in view of the fact that she suffered general undernutrition, the normal size of the heart would not exclude beriberi. The microscopic examination of the heart would bear out this statement.

To rule out absolutely "famine edema" as a source of some of the symptoms would be nearly impossible, since the patient received for a considerable length of time a greatly diminished caloric intake as well as deficient diet, her general condition being that of malnutrition. She suffered in addition from a general hypovitaminosis, although the symptoms due to the lack of vitamin B were most pronounced.

The patches of leukoplakia in the mouth, we feel, are not a mere coincidence, since they cleared under supply of vitamins A and B. In the light of the recent work of Wolbach and Howe on the epithelial changes following deficiency in vitamin A, they are significant.

The leukopenia is significant in view of the finding by Happ[27] of a constant diminution of leukopoietic activity in animals that were placed on diets poor in vitamin B.

This is the second fatal human case of avitaminosis resulting from incorrect diet reported in the literature with a pathologic description. The only other case, though not in a patient with diabetes, recorded in the literature is that of Wilson and Dubois.[28]

CONCLUSIONS

1. Avitaminosis possibly plays a rôle in the production of such symptoms as constipation and asthenia in cases of diabetes mellitus.

2. Insufficient training of both parent and patient in the care of diabetes may be responsible for such avitaminosis and lead to disaster for the patient.

3. In the case reported, a diabetic patient developed a condition like beriberi and eye lesions somewhat analogous to those of xerophthalmia, as a result of improper diet.

City National Bank Building.

27. Happ, W. P.: Bull. Johns Hopkins Hosp. **33**: 163 (May) 1922.
28. Wilson, J. R., and Dubois, R. O: Keratomalacia in Infant, Am. J. Dis. Child. **26**: 431 (Nov.) 1923.

ABSTRACT OF DISCUSSION

DR. ORLANDO H. PETTY, Philadelphia: Dr. Wohl's patient doubtless had some trouble caused by dietary deficiencies presumably largely due to avitaminosis. I feel that this work will be of value to us who have to do with strict diets, emphasizing particularly the value of foods containing vitamin A and B especially. I fear that many physicians still hold to the old idea which we can now term only semistarvation. A better understanding and clearer thinking about a properly balanced diet, protein, fat and carbohydrate, as well as vitamins and mineral salts, would avoid all of the catastrophes he presented, especially if the total calories were also considered. From that point of view it has immense practical value. From the point of view of lack of vitamins causing disturbances of endocrine glands, this is problematic, probably hypothetic. I myself feel that the weakness incident to untreated diabetes is due more to the various by-products of a disturbed metabolism than it is to any special food element or failure of a stimulating endocrine gland secretion.

DR. R. G. HOSKINS, Columbus, Ohio: Endocrinology has been grossly overexploited in the interpretation of obscure clinical conditions. It is unfortunate that the suggestion of endocrine involvement is thrown in unless Dr. Wohl has something rather definite in the way of specific indications of such. If there is a sufficient degree of suprarenal hypofunction, for example, to give an asthenia of this degree, there should be other suprarenal symptoms, such as pigmentation.

DR. SCOTT R. EDWARDS, Miami Beach, Fla.: Was there any marked pigmentation of the skin at any time during the course of the disease?

DR. PETTER BASSOE, Chicago: I am interested in the nervous complications of diabetes. I have had occasion to see many cases. It is questionable what the pathogenesis of the nervous symptoms may be. We usually call the condition multiple neuritis, but it is hardly the same as the neuritis following diphtheria or typhoid. There are so few cases with necropsy that I wish to make an appeal to Dr. Wohl to make his report of the nerve condition just as complete as possible. It would be interesting to know whether there are any changes that can be construed as inflammatory in addition to the degenerative ones.

DR. MICHAEL G. WOHL, Omaha: With regard to Dr. Petty's statement about the weakness caused by by-products of metabolism: I agree with him to a certain extent, yet it is difficult to reconcile the fact that a number of patients after a properly adjusted diet fail to show those by-products and yet continue to present weakness as a prominent symptom. I have in mind particularly a diabetic physician, who on a maintenance diet was free from sugar, acetone and diacetic acid, yet complained of weakness and extreme lassitude for weeks afterward. I have no conclusive proof that the reason for it may lie in changes induced by avitaminosis, yet this may be as good an explanation as any. The pathology of avitaminosis is at present being subjected to a critical study by Dr. Wolbach. We hope that his splendid work will throw some light on this, and that a more scientific explanation may be forthcoming. As to the question of pigmentation: Our patient apparently presented no pigmentation. An important point was brought up by Dr. Bassoe. As I am not a neurologist, I am unable to answer him. The lack of literature on the pathology of diabetes is rather striking. In view of the fact that these patients with neuralgic pains do not come to postmortems, we therefore have no opportunity of getting the nerves for pathologic studies. We shall get at the exact neuropathologic condition when more postmortems on diabetic patients are held; or perhaps when surgery is done, as for instance on the lower extremities, the nerves will be carefully studied. As to the round cell infiltration: I did not make the sections of the nerves. Dr. Houlton has studied them for me. I have asked him the same question, and his reply was that the condition was of a purely degenerative nature, and not inflammatory.

DEGREE OF MENTAL DEFICIENCY RESULTING FROM CONGENITAL SYPHILIS *

NEIL A. DAYTON, M.D.
Assistant to the Commissioner on Mental Diseases
BOSTON

Various factors have produced the prevailing opinion that congenital syphilis is of serious import as a cause of mental deficiency. In the main, this thought is traceable to early writings on the subject just subsequent to the introduction of the Wassermann reaction and preceding the standardization of the technic. The greater part of these reports are from the medical literature of Europe and consist chiefly of small groups of selected cases. The inclusion of these reports with others gave an incidence of 7.8 per cent for congenital syphilis in the feebleminded.[1] Doubt of these early reports prompted the assembling of data based exclusively on American statistics. Here the defects mentioned did not exist, as the reports, for the most part, embraced entire institution populations tested between 1910 and 1925. Five and three tenths per cent of the feebleminded in this country were found to have congenital syphilis. The comparison of this figure with congenital syphilis in the general child population demonstrated that the feebleminded rated 1 per cent higher in incidence than those not mentally affected.[2] However, a review of the positive cases[3] in the Wrentham State School provided other facts that tended to negate this apparent higher incidence. Half of the positive cases presented an etiologic background which rendered inevitable the production of a mentally deficient child regardless of the presence of syphilis.

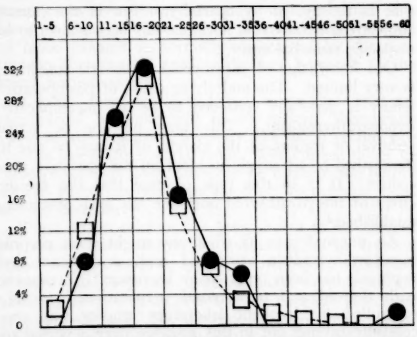

Chart 1.—Comparison of chronological ages, in five year periods, of mental defectives with congenital syphilis and mental defectives with negative Wassermann reactions. In sixty-one positive cases, the average age was 18.41 years; in 1956 negative cases, 18.42 years. Solid line with black circles, cases of congenital syphilis; broken line with squares, cases presenting a negative Wassermann reaction.

So, purely from the statistical standpoint, congenital syphilis does not occupy a prominent place as a cause of mental deficiency.

At this point, it became evident that a larger question remained unsettled. Up to this time no attempt has been made to determine the extent of the mental defect present in feebleminded persons with congenital syphilis. The study of mental deficiency is fortunate in having a means of judging accurately the degree of mental function present. By means of carefully evaluated mental tests, we have been able to place the impairment of function on a percentage basis and to state,

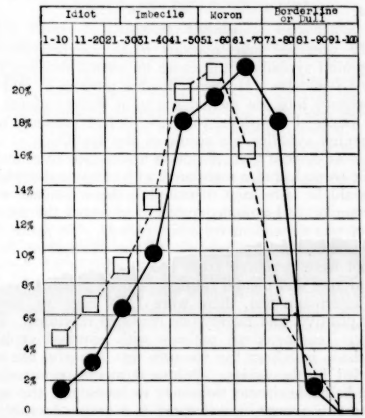

Chart 2.—Intelligence comparison (by intelligence quotient) between mental defectives with congenital syphilis and mental defectives with negative Wassermann reaction. In sixty-one positive cases, the average intelligence quotient was 0.53; in 1,956 negative cases, 0.46.

with comparative exactness, the degree of dysfunction existing at any age. As pathologic studies[4] of the brains of defectives with known mental ratings indicate that mental capacity matches brain complexity, we can gage the amount of injury supposedly wrought by congenital syphilis. If it can be shown that a severe degree of defect accompanies congenital syphilis as stated,[5] it is still a serious factor even though the actual number of cases is small.

TABLE 1.—*Intelligence of Mental Defectives with Congenital Syphilis*

	Idiot	Imbecile	Moron or Borderline
Dawson, W. J. G.: J. Psycho-Asthenics **17**: 70 (Dec.) 1912; **18**: 227 (June) 1914	9	18	26
Dayton, N. A.: Boston M. & S. J. **193**: 671 (Oct. 8) 1925	4	21	35
Gordon, A.: Arch. Pediat. **33**: 273 (April) 1916	2	9	28
Higgins, W. H.: Am. J. M. Sc. **155**: 549 (April) 1918	0	1	20
Moulton, A. B.: J. Psycho-Asthenics **18**: 222 (June) 1914	2	6	8
Raeder, O. J.: Am. J. Dis. Child. **21**: 240 (March) 1921	0	0	12
	17	55	129

Few of the writers reporting positive Wassermann reactions in the feebleminded have mentioned the mental status of their patients. A summary of those reported (table 1) shows that the higher grade cases predomi-

* Read before the Annual Meeting of the American Association for the Study of the Feebleminded, Toronto, June 3, 1926.

1. Dayton, N. A.: Syphilis in the Etiology of Mental Deficiency, Ment. Hyg. **9**: 760-771 (Oct.) 1925.

2. Dayton, N. A.: Congenital Syphilis as a Cause of Mental Deficiency, I, Statistics, Boston M. & S. J. **193**: 668-671 (Oct. 8) 1925.

3. Dayton, N. A.: Congenital Syphilis as a Causative Factor in Mental Deficiency, II, Analysis of Cases, Boston M. & S. J. **193**: 671-673 (Oct. 8) 1925.

4. Fernald, W. E.; Southard, E. E., and Taft, A. E.: Waverley Researches in the Pathology of the Feebleminded (Research Series, Cases I to X), Mem. Am. Acad. Arts and Sc. **14**: 19-128 (May) 1918.

5. Hunt, E. L.: Syphilis of the Nervous System in Children, Am. J. Syph. **5**: 259-267 (April) 1921. Thom, P. B.: Syphilis and Degeneration, J. Nerv. & Ment. Dis. **53**: 8-17 (Jan.) 1921.

nate. At this point it is well to remember that the feebleminded are not equally divided into the various mental gradings. The further we go from an intelligence normal, whether it is toward genius or idiot, the fewer we encounter. Among the feebleminded there are few idiots, more imbeciles and still greater numbers of morons and borderline cases.[6] For this reason the results of table 1 are less conclusive than the figures would indicate, but at the same time they show that there is no tendency to the production of lower grade cases.

OBSERVATIONS

My previous investigations make me believe that congenital syphilis is the cause of mental deficiency in only a few cases. However, for the purpose of making an inquiry into the mental status of these patients, in this paper I consider that the defect present with congenital syphilis is a result of the syphilis.

It was evident that, to obtain a satisfactory criterion of the mental grades associated with congenital syphilis, it would be necessary to compare these patients with a group of feebleminded patients in whom the mental defect was dependent on other factors. To make this comparison, all case records of the Wrentham State School were reviewed from the standpoint of chronological ages and mental ratings. In the patients having a Wassermann test, there were 1,956 negative, sixty-eight positive, and twenty-one doubtful reactions. For obvious reasons seven patients with acquired syphilis and those in whom the reaction was doubtful are not included in the tables. Before a mental comparison could be made, it was necessary to investigate the ages of the two groups, for if there is a preponderance of any particular age group in the positive cases, a corresponding disproportion in the mental ages might result. The first comparison between the negative and positive groups is by chronological ages (chart 1) and shows that, in this respect, there is little variation. As a further safeguard against the possibility of differences in the chronological ages influencing the mental ages, it was determined to use the intelligence quotient of the individual cases for use in making the mental comparison. A marked difference in the intelligence of the two groups is revealed by chart 2. The positive cases show fewer idiots, imbeciles and low grade morons, and more high grade morons and borderline cases than the negative group. In other words, the patients with congenital syphilis will average higher in mental rating than those whose feeblemindedness is due to other causes. In spite of lack of variation in ages of the two groups, it was thought that some of the patients of lower grade might have died in early years and left only those of higher grade. As our school accepts children of all ages down to 2 years, a review of the deaths would reveal any preponderance of lower grade cases showing syphilis. Of 228 deaths over a seventeen year period, there were two patients with a positive Wassermann reaction. These died at the ages of 23 and 57, respectively, and one was a high grade imbecile and the other a moron.

CONCLUSIONS

The intelligence of sixty-one patients with mental deficiency with congenital syphilis considered in this communication is definitely above that in 1,956 cases due to other causes. When congenital syphilis initiates the pathologic process resulting in mental deficiency, the process is less severe, and a higher average of intelligence is attained than in cases with other causation.

From the statistical point of view, congenital syphilis does not produce large numbers of cases of mental deficiency. When we consider the intelligence, congenital syphilis does not produce a low grade of defect. Therefore, from both the quantitative and the qualitative points of view, congenital syphilis is not a serious factor in the production of mental deficiency.

6. An instance of this is seen in the material of the present paper. Of the 2,045 patients considered, 16 per cent are idiots, 37 per cent imbeciles, and 47 per cent morons or of higher grade. These figures may be said to represent an institution population only and are not indicative of the actual numbers existing in the general population. The less obvious defects of the morons and borderline patients enable them to pass unnoticed and smaller relative numbers reach the institutions.

THE THERAPEUTIC VALUE OF THE PARATHYROID HORMONE *

J. B. COLLIP, M.D.
EDMONTON, ALTA.

The preparation of a stable, physiologically standardized extract containing the active principle of the parathyroid glands is a matter of such recent date that it is impossible at this time to designate with any degree of finality the therapeutic value of the new hormone.[1]

The experimental work in the laboratory has, it is true, gone ahead very rapidly, and it may be definitely stated from the results of this work that the active parathyroid extract is a specific for experimental parathyroid tetany in the same sense that insulin is a specific in experimental diabetes.

With this essential fact established, it was safe to predict that the new preparation would be a specific in hypoparathyroidism in the human subject. Clinical results thus far available entirely justify this view; that is to say, in hypoparathyroidism in the human subject the parathyroid hormone has been shown to be a specific remedial agent.

Our knowledge of parathyroid pathologic conditions is very limited. The underlying cause of postoperative tetany is generally conceded to be an uncomplicated hypoparathyroidism. This may be due to actual removal or trauma of the glands, or it may be due to diminished blood supply incident on the operative procedure. It is in this type of case that the specific effect of the parathyroid hormone has been absolutely established.[2]

An unusual case of what one might term chronic hypoparathyroidism associated with myo-edema and nephrosis has been reported by Davidson.[3] Treatment with thyroid and parathyroid preparations carefully controlled by frequent laboratory studies was successfully carried out in this instance over a period of some months. The patient later died from an acute infection. The postmortem examination disclosed the presence of only two parathyroid glands. These were found in the median position. The right one was apparently normal, while the left one was somewhat atrophied.

* From the Department of Biochemistry, University of Alberta Faculty of Medicine.

* Read before the Section on Pharmacology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. The literature is reviewed in Medicine **5**: 1 (Feb.) 1926.

2. Snell, A. M.: Parathyroid Extract in Treatment of a Case of Tetany, J. A. M. A. **85**: 1632 (Nov. 21) 1925. Crile, G. W.: Endocrinology **9**: 301 (July-Aug.) 1925. Lisser, Hans; and Shepardson, H. C.: Ibid. **9**: 383 (Sept.-Oct.) 1925.

3. Davidson, J. R.: Canad. M. A. J. **15**: 803 (Aug.) 1925.

The parathyroid hormone has been used in the treatment of infantile tetany. It is probable that there is something more than simple hypofunction of the parathyroid glands in this condition. The parathyroid hormone will no doubt be a useful agent in the treatment of spasmophilia, but it will remain for future research to determine the exact relationship of the parathyroid glands to this clinical condition.

The function of the parathyroid hormone is in the main related to calcium and phosphorus metabolism. It is possible that the parathyroid glands subserve other functions, and it is also possible that there may be other hormones in these glands of which we have no knowledge at present. Until such information is available, we must confine ourselves to known facts.

The facts about parathyroid physiology may be briefly stated as follows:

Experimental parathyroid tetany is characterized by a lowered calcium content of the blood serum and as a rule an increase in the inorganic phosphorus.

The parathyroid hormone, when administered by injection to dogs in a state of parathyroid tetany, causes the blood calcium level to be restored and the inorganic phosphorus if increased to be decreased. There is also the restoration of the animal to an apparently normal condition. There is also noted a definite quantitative relationship between the dosage administered and the calcium mobilizing effect produced.

Normal dogs which have been injected with an active parathyroid extract manifest an increase in the blood serum calcium which is proportionate to the dosage administered.

Overdosage effects which may result in death have been produced consistently in both normal and parathyroidectomized dogs.

The main physiologic action of the parathyroid hormone as seen by the laboratory worker is that of a blood calcium mobilizer. It is assumed that the level of blood calcium is normally maintained by the continuous liberation of newly elaborated hormone by the intact normal glands.

It would therefore seem logical to conclude that the parathyroid hormone will be of definite therapeutic value in any condition in which the blood serum calcium is below the normal value. The clinical proof of these predictions must, however, be forthcoming before we can authoritatively state the exact therapeutic value of this hormone.

Blood serum calcium has been shown to be lowered in postoperative tetany, in spasmophilia, in tropical sprue and in certain types of nephritis. Recently Powers [4] has reported lowered blood serum calcium values in certain cases of whooping cough. The value of treatment with the parathyroid hormone in all of these conditions as determined by studies of a large number of cases in each group will be awaited with great interest.

It is not improbable that the parathyroid hormone may have a therapeutic value in certain conditions in which the blood serum calcium is not necessarily lowered.[5] Dr. Aub has obtained suggestive results in cases of lead poisoning treated with the parathyroid extract. A condition of hypercalcemia induced by the parathyroid treatment would seem to facilitate the elimination of lead.

4. Powers, G. F.: Tetany as a Cause of Convulsions in Whooping Cough, Am. J. Dis. Child. **30**: 632 (Nov.) 1925.
5. Petty, O. H.; Stoner, W. H., and Schaffer, H. W.: Therap. Gaz. **50**: 173, 1926.

Not wishing to play the rôle of prophet, I will not venture further in this field but rather suggest to the clinicians that a potent parathyroid extract is now available which has the specific effect of mobilizing calcium in the blood stream. If one is desirous of influencing profoundly calcium metabolism, the new hormone may be employed as the therapeutic agent.

ABSTRACT OF DISCUSSION

DR. ROBERT S. DINSMORE, Cleveland: Fortunately, postoperative tetany is a rather infrequent occurrence. In mild cases the symptoms may occur at any time during the first twenty-four hours after operation. The patient complains of a tingling sensation and of numbness all over the body, with some degree of nervousness; and circumoral pallor is present. However, such cases are usually transient. Some one of this group of patients may develop the typical severe tetany with generalized convulsions and carpopedal spasms of the hands and feet, in which the hands assume the typical "accoucheur" position, the hands being often drawn across the chest. Formerly it was our routine procedure to give calcium lactate, 20 grains (1.3 Gm.) every four hours, and parathyroid extract, 1/10 grain (6 mg.), three times a day, with thyroid extract, 2 grains (0.13 Gm.) once a day. If the patients developed a true tetanic convulsion, one could be reasonably sure that they would develop other attacks on succeeding days. This has not been the case since we began the use of Dr. Collip's hormone during the past year. We now see only an occasional case in which there are two attacks of tetany. In other words, one injection carries a patient through possibly an entire operative period. We have also seen a small group of chronic cases, and this drug has been just as effective in this group. However, in this group the calcium content was often not lowered, and it was not increased after an injection of the hormone; but the symptoms were always entirely relieved. We are now carrying this group of chronic cases along by injections of the hormone.

DR. NORMAN M. KEITH, Rochester, Minn.: There are two points in this paper that are of interest not only to the physician but also to the physiologist. The first is that in a few of these cases, after they have been carried along for a certain length of time, they do seem to need calcium as well as the parathyroid hormone. What the explanation of this is I do not know. There is no doubt that in those cases of accidental surgical injury of the parathyroid at operation the patients can be kept healthy and well by the combined use of calcium and the hormone. The other point I wish to bring out is that animals that are given successive doses of the hormone developed a very viscous, thick blood with a decreased volume. Such observations are characteristic after dehydration; they are also characteristic of certain types of collapse and certain types of surgical shock. The blood pressure in the latter conditions may be low. Will Dr. Collip tell us whether he made blood pressure determinations in dogs given repeated injections of the parathyroid hormone?

DR. MARTIN B. TINKER, Ithaca, N. Y.: The surgeon should be especially grateful for Dr. Collip's investigations. With increasing numbers of operations for goiter each year, there is also an increasing number of patients having secondary operations. These patients have adhesions to a greater or lesser degree, which increase the trauma of operation and occasion the development of tetany in some instances. At least, we have found that if these patients can be carried past the first few days following operation, they get on splendidly. Of course, surgeons should be careful regarding the portion of thyroid overlying the vessels where the parathyroids are most frequently located. In my experience about two patients out of 500 operated on yearly develop tetany, and would probably die if they did not have some means of overcoming it. Possibly the work of Dr. Simpson of the department of physiology at Cornell University has not come to Dr. Collip's

attention. Dr. Simpson did much work on the thyroid and parathyroid, especially in sheep, and his results confirmed Dr. Collip's. Unfortunately, Dr. Simpson died recently and his results may not be reported as satisfactorily as they would have been had he lived.

DR. ORLANDO H. PETTY, Philadelphia: Our clinical studies with parathyroid hormone furnished by Dr. Collip have proved definitely that the hormone will raise blood calcium as it did in the dog. However, we found no serious symptoms of poisoning even with a marked elevation of blood calcium, in one case the calcium being elevated above 16 mg. per hundred cubic centimeters of blood. We have reported a number of cases in which Collip's parathyroid hormone was used. Serum calcium was invariably raised by this hormone, and clinical improvement followed in certain cases of infantile tetany, chronic ulceration, etc. I attended a young man who had myasthenia gravis of a severe type. Blood calcium estimation showed 7.3 mg. per hundred cubic centimeters of blood. Parathyroid was administered, 30 units daily, and his blood calcium soon rose to above 12 mg. The patient rapidly improved, and within six weeks was back at work again. In this case a definite lowering of calcium and improvement followed the administration of Collip's hormone after there was a definite rise in the blood calcium. His blood calcium has remained normal for several months without further administration of the hormone, and he is continuing his usual labors.

DR. FRANK C. NEFF, Kansas City, Mo.: About a year ago Dr. Collip furnished some of this extract to the University of Kansas. At that time we had three cases of infantile tetany. These three patients were children who had frequently repeated convulsions. These children were being fed on condensed milk. The blood calcium in all those three cases was markedly below normal and within the danger limits of convulsions, about 7 mg. The children had the other symptoms of tetany. In all these cases the blood calcium was increased by the daily administration of Dr. Collip's extract. For a few days 1 cc. of the extract was administered every four hours hypodermically. It had a marked effect on the elevation of the calcium within a few days. In one case the calcium rose above normal. Recently I have been using the present extract in a similar case once daily, 1 cc. hypodermically, and the calcium is gradually rising. From our limited experience, it seems to me that the parathyroid extract in tetany has a definite effect on the calcium storage in the blood. In two infants who are being followed up there has been no return of convulsions.

DR. J. B. COLLIP, Edmonton, Alta.: The case reports presented indicate that the hormone has a definite therapeutic value. Dr. Keith asked about the effect of hormone overdosage on blood volume. In the second half of overdosage experiments (dogs being used) there is noted a great increase in the hemoglobin content of the blood and a corresponding decrease in the plasma volume. We have no absolute data at present on the change produced in the total volume of circulating blood, but it may be assumed that it is definitely decreased.

Treatment of Leprosy in Philippines.—The population of San Culion is about 5,300 per year; hence leprosy is an exceedingly important item in the economic problem of the Philippines. There were a total of 531 positive cases treated during a three year period. Of these, 86 per cent were nodular on admission; 7 per cent were macular; 4 per cent were mixed, and 1 per cent were anesthetic. Twenty-eight per cent of all the positive cases gave an average of one year duration of illness before admission to the hospital. The greatest number (132) averaged 30 years in age. From the males (383) were derived 136 negatives; from the (148) females forty-two negatives. Seventy-seven per cent of the positive cases received the chaulmoogra ethyl ester with 0.5 per cent iodine. The average percentage of cures from Jan. 1, 1922, to Feb. 8, 1925, was 37 per cent.—*Rev. Filipina de med. y farm.*, May, 1926.

URINARY EXTRAVASATION IN RELATIONSHIP TO THE PELVIC AND PERINEAL FASCIA

REPORT OF CASES *

EDWARD WILLIAM WHITE, M.D.
AND
C. OTIS RITCH, M.D.
CHICAGO

Urinary extravasation is of peculiar interest, not only to the urologist but also to the general surgeon and general practitioner. Any clarification as to why urinary extravasation "points" in particular areas is welcome.

Anything that helps to coordinate both surgical and anatomic terms, without the addition of new terms, is a distinct advance, which will be appreciated by those doing perineal surgery. Nowhere else in urologic surgery is the skill of the specially trained urologist over the general surgeon more manifest than in perineal surgery.

THE PELVIC FLOOR, FASCIAE, SHEATHS AND PLANES

From outside inward is, first, the superficial fascia (panniculus adiposus) which is not peculiar to the perineum but is a continuation from other areas of the body. It passes into the scrotum, where it becomes replaced with involuntary muscle fibers and in this region is known as dartos muscle. Over the urogenital triangle it forms two distinct layers: the superficial layer and the deep layer. These are merely subdivisions of the superficial fascia; one should not confuse the superficial layer with the superficial fascia. The superficial layer is distinctly fatty and is continuous with the fat of the ischiorectal fossae and that of the medial surfaces of the thighs.

Case 1 illustrates a deflection of the extravasation by this layer of fascia to the medial surfaces of the thighs and into the ischiorectal fossae.

The deep layer or Colles' fascia is just as distinctly fibrous and spans the urogenital triangle, so that there is an intervening space, the superficial pouch of the urethral triangle, of appreciable dimensions. Its attachments are the same as the urogenital diaphragm. On each side to the rami of the pubis and ischium and posteriorly it is attached to the superficial transverse perineal muscles, and its fibers merge with the urogenital diaphragm to form the base of the urogenital triangle. The bulb and crura are comparatively massive structures in the space. It differs from the urogenital diaphragm anteriorly in that it is not attached, but passes over the scrotum, penis and contiguous parts of the anterior abdominal wall, to become continuous with Scarpa's fascia.

In addition to other structures, the urogenital diaphragm is composed of two densely fibrous layers of fascia—the inferior and superior layers of the urogenital diaphragm. The inferior layer (superficial layer) and the superior layer (deep layer) unite posteriorly to form the base of the urogenital diaphragm, and are conjoined anteriorly to form the transverse ligament of the pelvis. Both layers are attached later-

* Read before the Chicago Urological Society, Dec. 4, 1924.

ally to the pubic arch. The space between the two layers occupied by the other structures of the urogenital diaphragm is termed the deep pouch of the urethral triangle.

Extravasation into this space, as encountered in cases 3 and 4, fills this cavity with displacement of the pendulous portion of the inferior layer, with consequent

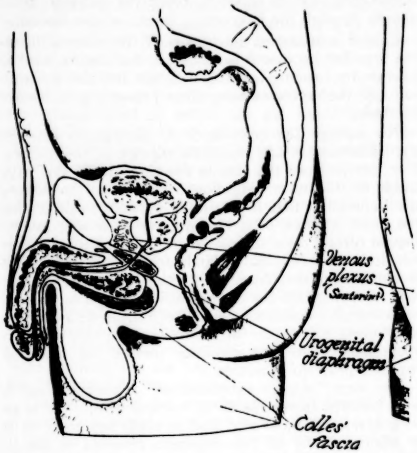

Fig. 1.—Sagittal view of urogenital diaphragm and Colles' fascia.

bulging into the perineum. If not relieved, it sloughs through the inferior layer or burrows round the urethra or a blood vessel, since the cavity is an enclosed one, to reach the exterior. In this case, if neglected, its course is the same as that described above.

We have no cases in this series in which the extravasation progressed through the superior layer.

The superior layer of the urogenital diaphragm is merely a continuation of the parietal layer of the endopelvic fascia, and in order to synchronize urinary extravasation from the urethra, reaching the areolar tissue of the perivesical spaces, as reported by some authors, one must visualize its passage from the deep pouch of the urethral triangle, its course determined by the visceral layer of the endopelvic fascia, in such manner that it passes between this layer of fascia and the prostate and seminal vesicles to reach the perivesical tissues. In this connection it is well to remember that the visceral layer of the endopelvic fascia divides into three parts; one goes behind the rectum, another over the bladder and still another to the prostate. The latter is known as the rectovesical fascia, the posterior layer of which is designated by surgeons as Denonvillier's fascia.

This series includes thirty-seven cases covering the last five years. No cases before this series are included in this study because some of the records are not complete. Nor have we included the single case of rupture of the pendulous portion of the urethra in which we found it unnecessary to operate. In two cases, or 5.4 per cent, the extravasation was deflected by the superficial layer of the superficial fascia. In five cases, 13.5 per cent, the extravasation was between the deep layer of the superficial fascia and the inferior layer of the urogenital diaphragm. In the other thirty cases, 81 per cent, the extravasation involved the urogenital diaphragm or its contained structures, notably the sphincter urethrae membranaceae.

The cases reported are representative of the different types of extravasation, and only those facts that are pertinent to this particular study are presented.

REPORT OF CASES

CASE 1.—J. G., aged 35, white, widowed, who entered the Alexian Brothers Hospital, June 15, 1923, had had gonorrhea fifteen years previously with no known complications. For the past six or eight months he had noticed that the urinary stream was small, slow and of little force, and required quite a straining effort to start the stream. He paid little attention to this condition until six weeks before admission, when he was unable to void at all. Some proprietary kidney pills relieved the retention, but following the ingestion of these he had marked hematuria for two weeks. After this episode he had had no undue symptoms until six days before entering the hospital, when the urinary difficulty returned. Two days before entering the hospital he was again unable to void and consulted a physician for the first time, who referred him to us for treatment.

We first saw him after his admission to the hospital, when examination revealed that he had temperature of 103, pulse 114, and white cell count of 36,000. The perineum was bulging, the overlying skin red and somewhat edematous. Palpation elicited excruciating pain in this region. The skin over the ischiorectal fossae and medial surfaces of the thighs was dark purplish, and obviously gangrenous. Rectal examination was extremely painful. The prostate was large, tense and painful.

Operation, under gas-ether, was not found expedient until four hours after entrance to the hospital, in which time there was remarkable progress of the extravasation. The gangrenous destruction involved not only the ischiorectal fossae and inner surfaces of the thighs, but also the dependent portion of the scrotum, the foreskin of the penis, and the contiguous regions of the anterior abdominal wall. He was found to have strictures of both the anterior and the posterior portions of the urethra, so that in addition to laying open the gangrenous areas an internal and external urethrotomy was done. The destruction of tissue was so extensive that the exact point of urethral rupture could not be ascertained. However, it was

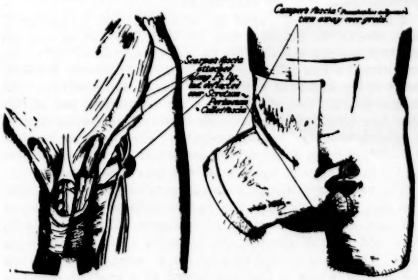

Fig. 2.—Front view, illustrating relationship of fasciae to spermatic cord; continuation of the panniculus adiposus over the anterior abdominal wall and the median surface of the thigh; deep layer of superficial fascia deflected over anterior abdominal wall.

determined that the extravasation was deflected by the superficial layer of the superficial fascia.

CASE 2.—F. L., a farmer, aged 50, white, married, referred by a physician of Hoopeston, Ill., entered the hospital, Aug. 15, 1923. In addition to the usual stricture history, he said that for five or six days previously he had more difficulty in voiding urine than was usual; that two days before he had acute retention, and that following a great deal of straining,

to enable him to void, he had aggravated dysuria and shortly tumefaction in the perineum.

The local examination revealed a tumefaction in the perineum about the size of a small orange, apparently necrotic. There was edema and gangrene of the scrotum, foreskin of the penis, and adjacent portions of the anterior abdominal wall.

An external urethrotomy, in addition to laying open the gangrenous areas, was done. At operation the rupture of the urethra was found to be deep to the deep layer of the superficial fascia, or in the superficial pouch of the urethral triangle. Thus the course of the extravasation depended on the deep layer of the superficial fascia.

CASE 3.—P. M., aged 40, white, a teamster, referred by Dr. Ralph Wheeler, had fallen astride a wagon coupling, four hours before entering the Alexian Brothers Hospital, May 15, 1924. When admitted to the hospital, he was passing bright red blood by the urethra, but there was no passage of urine.

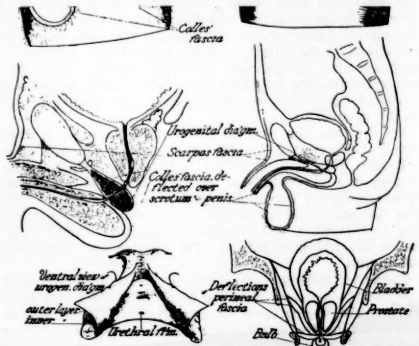

Fig. 3.—Sagittal view of fasciae and ventral view of urogenital diaphragm, showing its attachments along the pubic rami.

There was a painful mass in the perineum, about the size of a lemon, more or less circumscribed and distinct.

Operation revealed this mass due to an accumulation of blood and urine about the layers of the urogenital diaphragm, or in the deep pouch of the urethral triangle, producing the perineal mass seen on examination.

CASE 4.—A. S. C., aged 53, white, married, a contractor, who entered the hospital, Aug. 19, 1923, had had an external urethrotomy ten years before by one of us (E. W. W.). At that time he was told of the importance of future dilations, but nothing had been heard from him in the meantime. He was suffering from an attack of acute retention, and at this time we were unable to accomplish other than the passage of a whalebone guide by the strictures. This was left in place so that the urine might dribble around it. During the course of the next ten days we were able to pass a no. 8 bougie.

The patient persistently refused operation, and higher dilation was impossible. He was having chills, a temperature of 103, and other typical signs of urosepsis. The patient soon developed a small mass in the perineum about the size of a lime. This mass showed no tendency to spread except toward the surface, where it finally appeared as a small abscess and ruptured. This resulted in a urinary fistula. Finally tiring of the "chills and fever" with the accompanying collapse and depression, as well as the discomfort of the urinary fistula, he consented to operation. November 8, an external urethrotomy was done. The proximal or urethral opening of the perineal fistula was demonstrated at the urogenital diaphragm.

The preceding cases, contrary to common opinion, illustrate three types of urinary extravasation:

Case 1 illustrates the type in which the extravasation is deflected by the superficial layer of the superficial fascia. In case 2, the rupture took place between the deep layer of the superficial fascia and the inferior layer of the urogenital diaphragm, the extravasation making its way behind the former, which over the anterior abdominal wall is called Scarpa's fascia, with subsequent sloughing in this area.

In case 3, the rupture occurred at the urogenital diaphragm, and in order to reach the exterior, must slough through the intervening layers of the fasciae.

Case 4 is presented not because it illustrates a different type but because it is unique in that nature tried to operate by forming a perineal fistula and also by walling off the extravasation, thus preventing extensive necrosis.

No attempt has been made to distinguish between the inflammatory and traumatic rupture of the urethra. For our purpose the results are the same. We have dwelt on the term deflection in order not to convey the impression that it is always possible to determine the exact location of a rupture, for it is well known that in certain cases the malignantly destructive process has destroyed wellnigh all landmarks. But when there is subsequent dribbling, of varying duration, we are safe in saying that the urogenital diaphragm or sphincter urethrae membranaceae has been injured; and when one knows the planes of deflection, one can with an appreciable degree of certainty foretell the point of rupture, prior to operation.

The term "urinary extravasation" is common and is well founded in the minds of medical men. We have no quarrel with those who wish to apply any other term or phrase to any of the conditions referred to above.

CONCLUSIONS

1. Urinary extravasation is serious, and the prognosis should be carefully guarded.

2. Operation must be done at the earliest possible moment to save life and prevent extensive destruction of the urethra.

3. A more comprehensive knowledge of the structure of the perineum, with uniformity of technical terms, would be of inestimable value.

4. Each case is a distinct entity unto itself and should be so considered.

5. Thorough drainage should be established by wide incision of all involved tissue.

6. The postoperative care, with regular dilation, must be done as a routine.

7 West Madison Street.

Food Poisoning from Cheese Streptococcus.—Two outbreaks of food poisoning attributed to cheese have been reported within the year. One outbreak involving nine persons at Biddeford, Maine, was reported in March, 1925, as attributable to eating an imported Albanian cheese. The second outbreak of apparently twenty-two cases in Kansas City, Kan., was reported in February, 1926. The cheese suspected of causing the second outbreak was an American cheddar manufactured in Wisconsin. The reports of the attending physicians in the two cases were similar. The symptoms were: "pains in stomach, severe vomiting, diarrhea, expression dull and pulse fast." Investigation revealed the fact that all the affected persons partook of some cheese. Samples of both cheeses were sent to the Bureau of Chemistry. By bacteriologic examination, only cocci were found, and of these but five proved to be members of the *Streptococcus lactis* type. Members of the paratyphoid-enteritidis group, so commonly reported to be the cause of such outbreaks, were not found. —Linden, B. A.; Turner, W. R., and Thom, Charles: *Pub. Health Rep.* **41**:1647 (Aug.) 1926.

THYROID THERAPY AND THYROID TOLERANCE IN CHRONIC NEPHROSIS *

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NEW YORK

My purpose in this communication is to put on record some new observations on the use and effect of thyroid and thyroxin in the treatment of chronic nephrosis. In earlier publications I [1] have drawn attention to certain biochemical features present in chronic nephrosis which also appear in myxedema and other hypothyroid states, chief of which are the hypercholesterolemia and the reduced basal metabolism. Other observers, notably Eppinger,[2] have pointed out clinical resemblances between these two groups of disease, and I have recorded a case of chronic nephrosis which ultimately developed into a genuine myxedema.[3] Moreover, two cases have come under my observation, and I have been informed of a third, in which chronic nephrosis supervened on prolonged irradiation of the neck, involving the chest and thyroid. From these clinical and biochemical studies the conclusion was drawn that the function of the thyroid gland is in some way concerned in the abnormal metabolic phenomena present in chronic nephrosis, and certain principles were outlined for the use of thyroid and thyroxin in the treatment of this disease.

On the basis of the knowledge already recorded, my present task would have been a very simple one were it not for the fact that the general understanding of chronic nephrosis is still confused and uncertain. Before considering the therapeutic application of thyroid in chronic nephrosis, I will digress to discuss some of the questions that need further elucidation.

While most observers agree with my view that chronic nephrosis represents a definite entity, there are some who still class it as a type of nephritis, merely because certain features are common to both nephritis and nephrosis. This conception of chronic nephrosis results from the traditional view which regards most forms of Bright's disease as renal in origin and nature. However, a critical study of the various phenomena presented by the different types of Bright's disease justifies the conclusion that some have a renal and others an extrarenal origin. The use of the term nephrosis in our clinical nomenclature is inappropriate because it accords to the kidney undue importance in the evolution of the condition which it represents, and fails to coordinate both the renal and the extrarenal phenomena into one concept. While this term has perhaps been useful in many ways, it has not obviated the existing confusion, because our attention continues to be focused on the ultimate pathologic changes in the kidneys, rather than on the pathogenic processes responsible for these changes.

In consequence of all this, we find three clinical and pathologic varieties of Bright's disease grouped under the one heading of "nephrosis." They are the genuine, that is, primary nephrosis; the glomerulonephritides with nephrotic manifestations, and amyloid disease of the kidneys. There is some justification for this cogrouping, provided we are quite clear as to our premises. The term nephrosis in reality refers merely to the dominant lesion in the kidneys (tubular degeneration) which is common to all the types mentioned, but it takes no cognizance of the other pathologic manifestations, or as to how they are produced.

In my opinion the extrarenal factors are of prime importance and hence generic. The tubular degeneration is the consequence and not the cause of the disturbance, while the inflammatory processes and amyloid deposits in the kidneys are either independent or incidental. It seems well established that in primary or genuine nephrosis the kidneys fail to show inflammatory changes, and there is no sound reason for believing that tubular degeneration and the lipoid infiltration present in the kidneys are of inflammatory origin. There are strong indications, too,[4] that amyloidosis of the kidneys, which is occasionally seen in association with chronic nephrosis, may in reality not be a distinct and specific disease, but the culminating effect of a protein intoxication incidental to the metabolic perversion of chronic nephrosis.

It is my view that the extrarenal factors which are so striking and unique in chronic nephrosis are the expression of a primary systemic disorder which affects first the protein and later the lipoid metabolism. To this pathogenic process I have applied the name "diabetes albuminuricus," because I believe that the albuminuria of chronic nephrosis is not of renal origin, but is the expression of a profound and general metabolic change.[5] Because of an alteration in some of or all the cells of the body, or a modification (chemical, physical or biologic) in the serum protein itself, as a result of which the body is unable to utilize it for whatever function protein serves, it is excreted by the kidneys as a foreign substance, just as the kidneys excrete other substances from the blood stream which are foreign or which can serve no normal or useful purpose. As in diabetes mellitus, the glycosuria is ultimately the result of a perversion in carbohydrate metabolism, so in diabetes albuminuricus the albuminuria results from a perversion in the metabolic relations of the blood proteins to the body cells. The change implied is a qualitative one. The quantitative changes in the blood serum proteins are due to different causes. The reduction in the amount of the protein is traceable to the drain caused by the albuminuria, while the inversion of the albumin-globulin ratio is due in part to a difference in the rate of excretion of the various blood proteins, and in part to a change in the rate of globulin formation or to cellular disintegration.

The cause of the hypercholesterolemia that is so characteristic of chronic nephrosis is still uncertain. The origin of the cholesterol present normally in the blood is not definitely known; some is undoubtedly exogenous and some endogenous. It is subject to marked fluctuations under a variety of conditions. In some, it appears to be independent of external causes and definitely associated with metabolic disturbances, as in diabetes mellitus and nephrosis. There can also be no doubt as to the relation of the cholesterol content of the blood to the activity of certain glands of internal secretion, such as the suprarenal and the thyroid.

The lipoidemia of chronic nephrosis is obviously different from that of diabetes mellitus, in which it depends largely on the noncombustion of sugar. It is

* Read before the Section on Pharmacology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Epstein, A. A.: The Nature and Treatment of Chronic Parenchymatous Nephritis (Nephrosis), J. A. M. A. **69**: 444 (Aug. 11) 1917; Am. J. M. Sc. **163**: 167 (Feb.) 1922.

2. Eppinger, Hans: Zur Pathologie und Therapie des menschlichen Oedems, Berlin, 1917.

3. Epstein, A. A.: M. Clin. N. Amer. **5**: 1067 (Jan.) 1922.

4. Jaffe, R. H.: Amyloidosis Produced by Injections of Proteins, Arch. Path. & Lab. Med. **1**: 25 (Jan.) 1926.

5. Occasionally a mild transient glycosuria is associated with this condition.

not associated with ketogenesis, and appears to arise from the peculiar disturbance in the protein metabolism. In intensity and character, the lipoidemia of chronic nephrosis is very like that of myxedema; a fact which, coupled with other comparable features, suggests that it has a common origin in the two diseases.

In seeking an explanation for this phenomenon, we find strong evidence which points to a deficient protein metabolism as the direct cause of the hypercholesterolemia. As Lande and I [6] have pointed out, a certain relationship exists between the basal metabolism and the cholesterol content of the blood. Although not constant, it may be said in general that conditions which depress the metabolic processes of the body cause an increase in the cholesterol content of the blood, while those which augment metabolism cause a decrease. A few words on the particular effect on metabolism in general, of protein feeding, of fever, and of thyroid are in place here, because their influence on the clinical course of chronic nephrosis is very similar in nature. Protein feeding accomplishes its result by a specific dynamic action; fever heightens protein catabolism, while thyroid promotes the utilization of protein. Thus we see improvement and cure in some cases after high protein feeding, and in still others after the employment of thyroid.

The foregoing observations indicate that (1) chronic nephrosis, like myxedema, represents a disturbed protein metabolism; (2) the cholesterol content of the blood bears a reciprocal relation to protein metabolism, and hence can be used as an index of that metabolism, and (3) thyroid enhances protein utilization and therefore can be used for this especial purpose in the treatment of chronic nephrosis.

EFFECT OF THYROID EXTRACT

Records show that thyroid extract has been used in a variety of conditions, notably cardiac and renal diseases associated with dropsy. For the most part, its earlier use was based entirely on empiricism and consequently failed to attain any great importance. In 1917, however, Eppinger [2] made a more systematic study of the subject. His use of thyroid, however, had a limited application, for he employed it only in cases in which the edema did not yield to diuretic measures, and forbade its use if the response was not prompt. The dosage which he recommended, as we shall see later on, was far too small to be of any definite service. Thus, while his conception of the therapeutic application of thyroid in the treatment of various edemas had a fairly sound clinical foundation, he failed to realize the true function and value of thyroid in the treatment of chronic nephrosis.

Some of our knowledge of chronic nephrosis is obviously derived from comparisons with myxedema. But, while the biochemistry of myxedema has much in common with that of chronic nephrosis, the relation of the thyroid gland to these diseases is fundamentally different. Hypothyroidism and myxedema are the result of a deficiency in thyroid secretion, varying in degree. The relation of the thyroid to these diseases is therefore causal and generic. While there is no evidence to show that the thyroid gland is diseased in chronic nephrosis, or that its function is subnormal, yet experience indicates that the amount of thyroid required to restore the metabolism of chronic nephrosis to normal is greater than in myxedema. I do not mean to imply by this that in chronic nephrosis the activity of the thyroid gland is deficient or abolished, though that may occur; but I do believe that its activity, whether normal or even increased, is insufficient to cope with the existing metabolic disturbance. This may perhaps account for a number of the clinical points of similarity between myxedema and chronic nephrosis. The distinction might be clarified by designating myxedema as an actual hypothyroidism and chronic nephrosis as a relative hypothyroidism.

The primary object, then, of the present communication is to call attention to the enormous tolerance of patients with nephrosis for thyroid substance and thyroxin. We learn from reliable sources that the amount of thyroid necessary to reestablish normal metabolic conditions in myxedematous patients is relatively small, but I have found that in chronic nephrosis the amount of thyroid or thyroxin necessary to produce a therapeutic effect is most extraordinary. For example, daily doses of from 1 to 4 Gm. (15 to 60 grains) of thyroid are often required over long periods of time to elicit a metabolic response.

While superficially the difference in the behavior of myxedema and chronic nephrosis in relation to thyroid is quantitative only, the metabolic disturbance in chronic nephrosis must be of a somewhat different nature and much more profound in character. When measured in terms of thyroid requirement, the disturbance is even greater than that represented by the total cessation of thyroid secretion. Another indication of the fundamental difference is found in the basal metabolism. In all myxedematous patients the basal metabolism tends to approach a uniform level, which is about 40 per cent below normal.[7] In chronic nephrosis, the depression is not uniform and rarely attains such depths. In 60 per cent of the cases the basal metabolism is subnormal, the usual findings ranging from minus 10 to minus 22. In the other 40 per cent, the figures are either normal or slightly above normal. In only one case was the basal metabolism found to be as low as minus 39, and that was during the height of the edema.

Kendall [7] has shown that the efficacy and reactivity of thyroxin administered intravenously, depends on the speed with which the tissues absorb it from the blood stream and on the duration of its presence in the tissues. Thus, while one large dose (given intravenously) produces no ill effects, the same amount administered in small daily doses produces all the symptoms of hyperthyroidism and death. It appears, moreover, from his experiments that after a single large dose (given intravenously), 43 per cent of the thyroxin [8] is excreted in the bile and 13 per cent in the urine within the first fifty hours after the administration.

The fate of the thyroid and thyroxin in chronic nephrosis has not been determined by me; whether the unusual tolerance exhibited by these patients is due to increased excretion, inactivation, or lack of absorption by the tissues is still problematic.

PURPOSE OF TREATMENT

Thus, on the basis of what I have just stated, both here and elsewhere,[9] the problem in the treatment of chronic nephrosis is threefold, namely:

1. To replace the protein loss of the blood plasma which results from the albuminuria and which plays so large a part in the retention of water and the forma-

6. Epstein, A. A., and Lande, Herman: Studies on Blood Lipoids, Arch. Int. Med. **30**: 563 (Nov.) 1922.

7. Kendall, E. C.: Endocrinology **3**: 156, 1919.

8. Computed from iodine excretion following administration of thyroxin.

9. Epstein, A. A.: M. Clin. N. Amer. **4**: 145 (July) 1920 and the references given in footnotes 1 and 3.

tion of edema.[10] This is best accomplished by feeding a high protein diet; that is, 2 and 3 grams of protein per kilogram of body weight.

2. To compel the tissues to utilize protein and incidentally to reduce the lipoidemia. This, too, is often accomplished by a liberal protein, but fat-poor diet. The administration of thyroid aids in attaining this desideratum.

3. To reestablish normal metabolism. When high protein feeding fails to accomplish this, the institution of thyroid is definitely indicated. It must be remembered, however, that the main purpose in the use of thyroid is to stimulate protein utilization. It does not aim to replace protein feeding, which is a fundamental in the treatment of chronic nephrosis.

The symptomatology of chronic nephrosis is so closely interwoven with its biochemistry that whatever modifies its chemism in the right direction relieves its symptoms, and improves the condition. Thus, by virtue of a common attribute—stimulation of protein metabolism—beneficial results follow high protein feeding, thyroid administration and occasionally fever.

It must be remembered, however, that relief of symptoms and improvement alone should not be the sole objects of the treatment of chronic nephrosis. Experience convinces me that uncomplicated cases, and occasionally others are susceptible of complete cure by the intelligent and persistent use of the high protein diet and thyroid therapy. The necessary dietary means to which I have referred have been amply discussed on other occasions.[11] I will therefore attempt only to outline the use of thyroid.

METHOD OF TREATMENT

When the preliminary high protein feeding fails to give any therapeutic result, such as elimination of the edema, control of the albuminuria, and change in the chemical reaction of the blood, the use of thyroid is begun. The initial dose is usually small, from ½ to 1 grain (0.03 to 0.065 Gm.) three times a day. In many instances this dose may be sufficient to enhance the effect of the high protein diet in attaining its therapeutic success. As a rule, however, much larger doses are needed. The amount of thyroid is therefore rapidly increased until a daily dose of 15 grains (1 Gm.) is reached. If such a dose fails to give any indication of effectiveness, it is immediately doubled and administered for from five to seven days. If this in turn does not give therapeutic results, the use of thyroxin is resorted to. It is given intravenously, the initial dose being from 5 to 10 mg. This dose may be repeated at intervals of from five to ten days until definite effects are observed. The beneficial effect is indicated by increased diuresis, diminution in the albumin output and decrease in the lipoidemia. While increase in pulse rate and elevation of temperature occasionally follow the use of thyroxin, no toxic symptoms develop as long as the lipoidemia persists.

The effect of thyroxin on the lipoid content of the blood is well illustrated by a case of idiopathic xanthomatosis, not associated with any other known metabolic disease, in which a hypercholesterolemia was present. Following the administration of 3 mg. of thyroxin, the cholesterol in the blood dropped from 484 to 320 mg. per hundred cubic centimeters, a similar dose given seven days later caused a further drop to 285 mg., and then again to 190 mg. per hundred cubic centimeters. On withholding the further administration of thyroxin,

TABLE 1.—*Results of Treatment in Case 1*

Date	Diet	Medication	Cholesterol Mg. per 100 Cc.	Basal Metabolism	Weight, Pounds	Pulse Rate	Blood Pressure	
							Systolic	Diastolic
8/21-9/3/25	Protein..... 140 Gm. Carbohydrate 390 Gm. Fat..... 50 Gm.	.....	334	—15	153	72-112	110	70
9/3-9/5/25	.....	Thyroid, 3 grains daily	...	—11	...	.....	...	**
9/ 6/25	.....	Thyroxin, 3 mg.....	334	....	...	.....	...	**
9/ 9/25	.....	Thyroid, 9 grains daily	...	Normal	141	70-100	...	**
9/11/25	.....	Thyroid, 15 grains daily						
9/13/25	.....	Thyroid, 21 grains daily	336	—15	143	.....	...	**
9/18/25	.....	Thyroid, 30 grains daily	...	— 6	142	68-108	...	**
9/21/25	.....	Thyroid, 36 grains daily	358	....	143	70-100	...	**
9/26/25	Protein..... 220 Gm. Carbohydrate 250 Gm. Fat..... 50 Gm.	Thyroid, 15 grains daily						
9/28/25	.....	Thyroid, 30 grains daily						
10/ 1/25	.....	.....	240	+15	...	.....	...	**
10/ 4/25	.....	Thyroid stopped						
10/ 7/25	.....	Thyroid, 15 grains daily	464	—11	...	.....	...	**
10/10/25	Protein..... 250 Gm. Carbohydrate 200 Gm. Fat..... 40 Gm.							
10/15/25	.....	Thyroid, 7½ grains daily						
10/18/25	.....	Thyroid stopped						
10/21/25	.....	Thyroid, 15 grains daily	...	— 9	143	76-100	110	60
10/29/25	Patient left hospital..	Thyroid received = 1,018 grains, average = 20 grains daily						
	Readmitted to hospital							
11/11/25	Protein..... 250 Gm. Carbohydrate 200 Gm. Fat..... 40 Gm.	Thyroid, 30 grains daily	520	+ 3	155	76-112	116	60
11/13/25	.....	.....	...	+ 9	139	.....	...	**
12/ 1/25	.....	Thyroid, 10 grains daily						
12/ 5/25	.....	.....	...	+ 5	...	112	...	**
12/ 7/25	.....	Thyroid, 9 grains daily	...	+ 5	...	.....	...	**
12/18/25	.....	.....	266	....	...	.....	...	**
12/21/25	.....	.....	...	+10	...	.....	...	**
1/ 4/26	.....	.....	...	....	137	.....	...	**
1/12/26	Patient left hospital..	Thyroid received = 1,035 grains, average = 14.8 grains daily						
1/29/26	Protein..... 250 Gm. Carbohydrate 200 Gm. Fat..... 40 Gm.	Has not been taking thyroid for 10 days	560	+ 7	149 no edema	.....	...	**
4/ 1/26	Patient working.....	.....	416	+ 1	149½	.....	...	**
4/ 2/26	.....	Thyroid, 6 grains daily	...	....	...	96	...	**

10. Epstein, A. A.: Am. J. M. Sc. **154**: 638 (Nov.) 1917.
11. Epstein (footnote 1, first reference; footnote 3; footnote 9, first reference; footnote 10).

the cholesterol content of the blood rose two weeks later to 340 mg.

The oral administration of thyroid in large doses occasionally causes gastric distress, such as anorexia and nausea, and in such cases the use of thyroxin is resorted to at once along the lines outlined above. As soon, however, as therapeutic results are evidenced, the dose of thyroid and thyroxin is reduced, the main guide being the lipoidemia. It is a very comforting fact that thyrotoxic symptoms have not been observed by me thus far, in spite of the enormous doses of thyroid and thyroxin used, a fact which would seem to indicate that there are not likely to be any untoward symptoms prior to a favorable turn in the clinical course of the disease.

Space will not permit a detailed account of all the cases treated with thyroid and thyroxin. I have selected three cases, which are still under treatment, and which illustrate the great tolerance these patients have for thyroid and thyroxin, together with some of the effects that have been produced.

CASE 1.—G. H., a man, aged 22, native American, a receiving clerk, admitted to the hospital, Aug. 21, 1925, complained chiefly of swelling of the lower extremities, which developed seven weeks before admission, and puffiness of the eyelids. The edema was at first transient, later permanent and progressive. The physical examination was negative except for a soft pitting edema of the lower extremities. The blood Wassermann reaction was negative. The urine contained albumin, + +; specific gravity was 1.020; there were no formed elements. Chemical examination of the blood revealed: total serum protein, 4.25 per cent; total globulin, 3.20 per cent; albumin, 1.09 per cent. Cholesterol was 0.334 per cent. Nitrogen waste products were normal. The basal metabolism was minus 15. The diagnosis was chronic nephrosis.

With the exception of one small dose of thyroxin (3 mg.), the treatment in this case consisted entirely of thyroid and a high protein diet. As indicated, very large doses of thyroid [12] were required to effect a reduction in the cholesterol and a rise in the basal metabolism. Interruption of its use, as seen in table 2, on two separate occasions caused a return of the hypercholesterolemia, together with a fall in the basal metabolism. After a period of treatment for four months in the hospital, his edema had subsided and the albumin had cleared up entirely. Recently, however, there has been a recurrence of the albuminuria and he has been advised to return to the high protein diet and to take 6 grains (0.4 Gm.) of thyroid daily. The high protein diet must be continued until the albuminuria disappears, and thyroid must be used as long as the cholesterol content of the blood remains high.

CASE 2.—A. G., a man, aged 44, an insurance agent, entered the hospital, Sept. 13, 1924, complaining of generalized edema, which had developed eight months before. The rest of the history is irrelevant. Physical examination revealed the presence of an ascites, rightsided hydrothorax, and edema of the lower extremities and back. There were no circulatory disturbances. The blood Wassermann reaction was negative. The urine contained albumin, + + + +; the specific gravity was from 1.010 to 1.028; a few casts and leukocytes were present. The phenolsulphonphthalein test yielded 59 per cent in three hours. Chemical examination of the blood revealed: total serum protein, 3.7 per cent; total globulin, 2.28 per cent; albumin, 1.4 per cent. Cholesterol was 0.672 per cent. Nitrogen waste products were normal. The basal metabolism was minus 36. The diagnosis was chronic nephrosis.

TABLE 2.—*Results of Treatment in Case 2*

Date	Diet	Medication	Cholesterol Mg. per 100 Cc.	Basal Metabolism	Weight, Pounds	Pulse Rate	Blood Pressure	
							Systolic	Diastolic
9/16- 9/24/24	Protein..... 150 Gm. Carbohydrate 120 Gm. Fat..... 20 Gm.	.....	672	—36	167½	60-108	116	66
9/24-10/18/24	.....	Thyroid average 15 grains daily; total, 492 gains	636 528	—22	171	60- 92	...	..
10/18-10/20/24	.....	Thyroxin, 5 mg.	...	....	166	84-100	...	..
10/20-10/23/24	.....	Thyroxin, 5 mg.	...	—13	...	92	...	..
10/23/24	.....	Thyroxin, 10 mg.	530	....	165	128	...	..
10/24-11/18/24	.....	.....	528	—12	160	80-120	...	..
11/19/24	.....	Thyroxin, 5 mg.	....	....	163	80	...	..
11/24/24 Ambulatory	.....	Thyroxin, 5 mg.	552	—24	...	.....	...	..
12/ 5/24	.....	Thyroxin, 5 mg.						
12/13/24	.....	Thyroxin, 4 mg.						
12/20/25	.....	Thyroxin, 5 mg.	...	—20	...	..	...	..
1/ 3/25	.....	.....	500	—13	149¾	80	...	..
1/16/25	.....	Thyroid, 3 grains daily	...	— 7	148	80	...	..
1/31/25	.....	Thyroid, 3 grains daily	...	— 6	145	..	...	..
2/14/25	.....	Thyroid stopped.....	...	+ 6	142¾	..	...	..
3/14/25	.....	Thyroid stopped.....	...	+ 4	144	..	...	..
6/20/25	Mixed diet.....	Thyroid, 6 grains daily	340	—10	134⅞	..	128	74
7/11/25	.....	Thyroid stopped.....	...	+ 7	132½	..	...	..
10/ 5/25	.....	Thyroid, 6 grains daily	336	—10	130½	..	...	..
10/5-12/30/25	.....	Thyroid, 6 grains daily						
1/11/26	.....	Thyroid stopped of his own accord for 2 weeks						
4/14/26	Mixed diet; patient works 8-10 hours daily.....		342	+ 9	134½	..	128	70

The salient points illustrated by this case are the reduction in the cholesterol content of the blood to normal, the elevation of the basal metabolism, and the subsidence of the edema. Traces of albumin still persist.

CASE 3.—M. R., a man, aged 30, a drug clerk, entered the hospital, Aug. 18, 1925, complaining chiefly of an edema of two years' standing. The patient had been under treatment in two different institutions without result. The blood Wassermann reaction was negative. The urine contained albumin, + + + +; microscopic examination was in general negative, occasionally a few casts being seen. The specific gravity ranged from 1.014 to 1.040. Chemical examination of the blood revealed: cholesterol, 0.334 per cent; nitrogen waste products, normal. The basal metabolism was normal. The diagnosis was chronic nephrosis.

In this case both thyroid and thyroxin were used. Notwithstanding the extraordinary dosage, this case has been most refractory because of the patient's inability to take any nourishment. Various measures were used to induce diuresis; urea was used, but failed until it was used in combination with thyroid. His edema has subsided entirely; the albuminuria is very much reduced, and his general condition is execllent.

12. Burroughs and Wellcome's tablets of desiccated thyroid gland were used throughout these studies.

For a period of five months he received an average of 23 grains (1.5 Gm.) of thyroid daily, and in addition he received 137 mg. of thyroxin, in divided doses, over a period of about eleven weeks.

The high protein diet, and thyroid therapy in more moderate doses, are continued until a cure can be attained. This may require a year or longer for its accomplishment. It must be borne in mind, as already repeatedly stated, that while the basal metabolism serves in a measure as an index, the chief guide is the cholesterol content of the blood. When this reaches a normal or subnormal level, thyroid should be discontinued and resumed only when the cholesterol shows a definite tendency to rise. The use of thyroid is contraindicated during a febrile attack.

TABLE 3.—*Results of Treatment in Case 3*

Date	Diet	Medication	Cholesterol Mg. per 100 Cc.	Basal Metabolism	Weight, Pounds	Pulse Rate	Blood Pressure	
							Systolic	Diastolic
8/20/25	Protein..... 100 Gm. Carbohydrate 250 Gm. Fat..... 50 Gm.	.....	300	Normal Temp. 100 F.	136	.....	110	75
8/24/25	Patient does not eat well	Thyorid, 6 grains daily						
8/26/25	.....	Thyroid, 9 grains daily						
8/27/25	.....	Thyroid, 15 grains daily	424	—11	...	.....	...	..
8/28-9/24/25	.....	Thyroid, 21 grains daily	221	....	138-150	.....	...	..
9/11/25	.....	.....	434	....	...	.....	...	..
9/25-10/1/25	.....	Thyroid, 30 grains daily	380	....	140	88-112	...	..
10/ 9/25	.....	.....	384	Normal	142	76-114	...	..
10/12/25	Patient does not eat well	Thyroid stopped Thyroid received = 1,160 grains in 49 days; average = 24 grains daily						
10/ 6/25	.....	Thyroxin, 7 mg.						
10/14/25	.....	Thyroxin, 10 mg.	...	....	...	76-132	...	..
10/23/25	.....	Thyroxin, 10 mg.	...	....	150	.....	...	..
10/30/25	.....	.....	...	— 9	...	.....	...	..
11/ 1/25	.....	.....	...	....	143	.....	...	..
11/ 5/25	.....	Thyroxin, 10 mg.	...	....	...	80-112	...	..
11/ 9/25	.....	.....	...	+20	...	.....	...	..
11/12/25	.....	.....	251	....	...	.....	...	..
11/16/25	.....	.....	...	—15	...	.....	...	..
11/18/25	.....	Thyroxin, 10 mg.	...	....	...	96-112	...	..
11/20/25	.....	.....	...	—19	...	80-100	...	..
11/23/25	.....	Thyroxin, 10 mg.						
11/25/25	.....	.....	...	— 9	...	.....	...	..
11/27/25	.....	Thyroxin, 10 mg.	...	....	...	80-96	...	..
12/ 2/25	.....	Thyroxin, 10 mg.	...	....	...	72-82	...	..
12/ 4/25	.....	.....	...	— 2	152	.....	...	..
12/ 7/25	.....	Thyroxin, 10 mg.						
12/ 8/25	.....	.....	178	Normal	...	.....	...	..
12/12/25	.....	Thyroxin, 10 mg.	...	....	137	.....	...	..
12/14/25	.....	.....	...	—12	...	.....	...	..
12/16/25	.....	Thyroxin, 20 mg.						
12/18/25	.....	.....	...	+ 4	142	.....	...	..
12/22/25	Protein..... 150 Gm. Carbohydrate 250 Gm. Fat..... 50 Gm.	Thyroxin, 20 mg.	...	....	...	80-136	...	..
12/25/25	Patient not eating well	Thyroxin received = 137 mg.	...	+12	...	.....	...	..
12/29/25-1/2/26	.....	Thyroid, 45 grains daily						
1/ 2/26	.....	Thyroid stopped.....	...	....	139	.....	...	..
1/9/25-3/7/26	.....	Thyroid, 30 grains daily						
1/14/26	.....	.....	...	—17	...	.....	...	..
1/20/26	.....	.....	290	....	...	.....	...	..
1/25/26	.....	.....	...	— 8	...	.....	...	..
2/13/26	.....	.....	254	....	109	.....	...	..
3/ 8/26	.....	.....	...	—11	...	.....	...	..
3/8-3/24/26	.....	Thyroid, 10 grains daily						
3/15/26	.....	.....	324	....	91	.....	...	..
3/24/26	.....	Thyroid stopped Thyroid received = 2,070 grains in 99 days; average = 21.9 grains daily						
4/14/26	.....	.....	290	—13	109	.....	...	..

In complicated cases of chronic nephrosis, that is, cases associated with true renal disease, the problem in the treatment is the same in principle but different in detail. If azotemia is present the dosage of thyroid is smaller, and the amount of protein used in the diet is reduced to the basal requirement (figured on the normal for the individual), plus an amount equal to that lost in the urine.

AZOTEMIA

A few words in reference to azotemia in these cases may be in place here. It is frequently said that in chronic nephrosis nitrogen retention does not occur. This refers to the nonprotein nitrogen in the blood and is used as a distinguishing clinical feature between chronic nephrosis and true renal disease. This statement is misleading because retention of nitrogen does take place in chronic nephrosis although it is not manifest in the examination of the blood. The content of the waste products in the blood in nephrosis depends on two factors: the concentrating power of the kidneys and the water retention of the tissues. In uncomplicated cases of nephrosis, retention of nitrogen waste products occurs just as it does in complicated cases, but the concentration of these waste products in the blood is not increased because of their diffusion into the water-logged tissues. This is borne out by the fact that when the edema subsides, there results a temporary azotemia or increased nitrogen content of the blood. This results from a difference in the rate of excretion of water and solids by the kidneys. First comes the water, then the salts, and finally the nitrogen waste products, which lag somewhat behind. In the complicated cases, because of the deficient concentrating power of the kidneys, there is a persistent lag in the excretion of nitrogen waste products, so that the retention of these substances exceeds the retention of water by the tissues, and, failing proper dilution, these substances become concentrated in the blood and tissue fluids.

When and if the azotemia subsides, practically the same rules for treatment are observed as in the other

cases, with the exception of the use of protein in the diet, which is limited as long as the kidneys indicate functional disturbance in relation to concentration of the urine and ability to excrete nitrogen waste products.

NEPHROSIS WITH SYPHILIS

There is one other group of cases to which I wish to call special attention, and in which two distinct sets of therapeutic indications exist. The ultimate outcome of these cases depends on the order in which the indications are met. I refer here to the cases of nephrosis to which a history of syphilis or in which a positive Wassermann reaction is obtained. It will be recalled that Munk in discussing lipoid nephrosis ascribed the etiology of many of his cases to syphilis. I have encountered only three cases of nephrosis with syphilitic history and a positive Wassermann reaction. My experience with them indicates that the nephrosis is an independent condition and has nothing to do with the syphilis. Attempts to treat the syphilis resulted in marked aggravation of the nephrosis. In two of these cases, therefore, attention was first given to the nephrosis. The usual therapeutic procedures were used, namely, high protein feeding and thyroid, and the patients made a complete recovery from the nephrosis. In the third case, which was complicated with general paralysis, the treatment for the nephrosis could not be complete.

It is therefore important to remember that the coexistence of syphilis or a positive Wassermann reaction with a chronic nephrosis does not signify that the latter is necessarily a result of syphilis.

SUMMARY

1. The term chronic nephrosis is used to designate a group of cases in which a profound metabolic disturbance exists. To this disturbance the name "diabetes albuminuricus" has been applied.

2. The pathologic changes in the kidneys (tubular degeneration) are the consequence and not the cause of the metabolic disturbance.

3. The therapeutic requirements in chronic nephrosis are met in some cases by high protein feeding alone, and in others in conjunction with thyroid or thyroxin.

4. Cases of chronic nephrosis exhibit an unusual tolerance for thyroid and thyroxin.

5. The response to thyroid therapy is best measured by the cholesterol content of the blood. Thyrotoxic symptoms do not occur as long as a hypercholesterolemia exists.

6. Certain cases of chronic nephrosis are susceptible of complete cure by the intelligent and persistent use of high protein feeding and thyroid therapy. This may require a year or longer to accomplish.

70 East Eighty-Third Street.

ABSTRACT OF DISCUSSION

DR. NORMAN M. KEITH, Rochester, Minn.: This question of nephrosis is very important and difficult. I think it has been the experience of almost all the workers in this field that they have found there are certain cases very much and almost exactly like the cases that Dr. Epstein first described in 1917, while others do not present the metabolic disturbance that he then described. I think we can say that certain cases do respond to the treatment of high protein therapy. Dr. Berglund of the University of Minnesota has had some interesting experiences in the last year in regard to the albuminuria in cases of nephrosis. He has found that when he gives these patients a large protein intake, such as Dr. Epstein has described, the albuminuria was markedly increased temporarily, and at the same time there was an increase in the plasma proteins up to 30 per cent. In our experience we have not seen many of these cases with this metabolic disturbance that Dr. Epstein has outlined. One such patient first came to us two years ago. She did have these findings in the blood, and presented, I think, a true nephrosis of the Epstein type. Instead of following his regimen, we have treated her with diuretics such as calcium chloride, ammonium chloride, and the combined dose of ammonium chloride and the organic mercury preparation merbaphen (novasurol) and now we have been able to keep her edema free for practically one year. The urine still shows albumin and casts, and we do not feel that she is cured; but the blood cholesterol, blood fats, and total serum proteins are normal. She is better and able to work, something she had not been able to do for a period of a year previous to her admission. I feel that there may be a place for this treatment, and, as Dr. Epstein has pointed out, it may take a year or more to bring about a cure; but I do feel that there are many cases of nephrosis in which this treatment is not efficacious or is difficult to apply, and that we must seek other methods, and that other methods, such as the use of certain diuretics, may give us similar or even better results.

DR. ALBERT A. EPSTEIN, New York: I am sorry that we cannot present patients here because I could have brought at least a dozen that are absolutely well and have no trace of albumin. In fact, insurance companies are willing to take them on normal premiums. This disease is curable. The albumin is just an incident and will continue as long as the underlying perversion of metabolism persists, and the only way we can remedy that perversion is by compelling the utilization of proteins within the body. As I stated in my paper, protein accomplishes this by its specific dynamic action. Sometimes we see a very remarkable improvement after a febrile attack. We have one such case in the hospital now, a man presenting a typical nephrosis, who developed lobar pneumonia and is promptly beginning to improve after the subsidence of the fever. I explain that on the basis that the effect of the febrile attack on metabolism is much the same as the use of high protein feeding and thyroid therapy. I do not see how we can possibly confuse this condition with any other renal disease. Primarily, a renal disease does not produce any such disturbance as we find in chronic nephrosis. I was gratified to see in the exhibit of Dr. Hartman's work on the direct effect of the roentgen ray on the kidneys, and from what he tells me, that the clinical picture of the animals is different from anything like what we find in chronic nephrosis. As far as the use of diuretics is concerned, the edema is only an incident; it does not worry us, but it worries the patient. There are many ways of getting rid of the edema. I believe that the low protein content of the blood serum is largely responsible for the persistent edema, and on comparing a great many cases, I find that when the protein content of the blood serum is above 5 Gm. per hundred cubic centimeters the edema is not constant. These patients will have edema, and when they go to bed it disappears. If the protein content of the blood serum is below 5 Gm. per hundred cubic centimeters, the edema is persistent whether they are up and about or in bed. It is a soft edema, and if one puts a needle under the skin one will get nothing but a clear, watery fluid. The use of diuretics is merely a means of getting rid of the edema. It does nothing toward the cure of the condition. It seems certain to me that nephrosis, when uncomplicated, is an absolutely curable disease. The best means available is the regimen that I have outlined, and it is essential to make the patient stick to it. This is not always an easy matter. The complicated cases are those associated with a hypertension and in which a true renal disease supervenes. In those cases it is not advisable to use very high protein feeding, and we limit the protein intake to the basal requirement, plus an amount of protein equal to that lost in the urine.

THE CONTROL OF SCARLET FEVER IN INSTITUTIONS

BY ACTIVE IMMUNIZATION WITH TOXIN DETOXIFIED WITH SODIUM RICINOLEATE

WOODARD COLBY, M.D.
ST. PAUL

Through the work of the Dicks it has been shown that an active immunity can be established in positive Dick reactors by the injection of scarlet fever streptococcus toxin.

The process of immunization has since been made mild, safe and rapid through proper neutralization of the raw toxin with sodium ricinoleate.[1] By means of this method it has been shown that 87 per cent of children under 8 years of age and as high as 77 per cent of older children susceptible to scarlet fever have been made Dick negative in eight days. The rapidity with which the immunity occurred was entirely owing to the large dosage (from 3,000 to 5,000 skin test doses) possible with the neutralized toxin.

An ideal immunizing process has a double aid: 1. To immunize fairly permanently. 2. To preclude the possibility of epidemics thereby.

The apparent immunity established at the end of eight days as indicated by repeated skin tests, while not fulfilling the second aim completely, does, however, suggest the value of the procedure in controlling an outbreak of scarlet fever, especially in institutions and schools where close contact in dormitories, class rooms and dining halls would lead almost unavoidably to an epidemic.

Therefore it was decided to try out the large doses of neutralized toxin on all susceptible students when in November, 1925, three cases of scarlet fever developed at the School for the Deaf in Faribault, Minn., with 272 children enrolled, whose ages range from 6 to 18 years. Every child was given the Dick test, November 27, which, when read, November 28, showed seventy-six children to be positive. The seventy-six were immediately injected with scarlet fever streptococcus toxin in a 2 per cent solution of sodium ricinoleate, so that the concentration of the toxin was 3,000 skin test doses per cubic centimeter. This was given intramuscularly in the deltoid.

One week later a second injection was given, with a concentration of 5,000 skin test doses per cubic centimeter, neutralized by a 2 per cent sodium ricinoleate solution. Local reactions were few and mild. Following the first injection there were only two general reactions, with slight fever and headache lasting about twenty-four hours. An adult employee with a four plus Dick test, while given only 1,500 units, developed slight malaise, a temperature of 99.5 and a generalized rash. Following the second injection of the toxin, no child reported at the doctor's office.

One case of scarlet fever developed in a patient with a positive Dick reaction five days after the first injection. The patient showed the typical tongue, slight sore throat and fever and a mild rash. No other case has since developed in the school.

Retests, Jan. 30, 1926, three months later, gave the following results: Of the thirty-six girls immunized, thirty-two were negative, or 88 per cent. Of the thirty-eight boys, twenty-three, or 60.5 per cent, were negative. The lower percentage of negatives in the boys was undoubtedly due to the fact that most of them were 15 years of age and over, which tends to confirm a previous observation in working with this method, that older children and young adults do not immunize as readily as younger children.

An interesting point was observed in comparing the Dick tests made with scarlet fever streptococcus toxin supplied by two different biologic houses. Whereas one toxin gave a definite positive, the other was equally positive in its reaction with only one exception.

Retests, April 25, six months later, on seventy-one of the original series (five children did not return to school the second semester) gave startling results. Only three out of seventy-one boys and girls gave mildly positive reactions, or 95.7 per cent were negative.

In view of the fact that mild cases of scarlet fever have been observed in cases known to be Dick negative, retests were made with a ten-strength toxin, which showed only six mildly positive reactions, or a remaining 91.5 per cent negative.

That infection of the throat with the scarlatinal streptococcus may occur in persons immune to scarlet fever is certain. This was clearly shown at the Jean Martin Brown Home for Children, where three cases of scarlet fever developed in rapid succession in January of this year. Without a Dick test being done, all forty-two children enrolled were given 3,000 skin test doses intramuscularly, followed in one week with 5,000 skin test doses. Three weeks after the second injection a boy, aged 12 years, developed fever, general malaise, sore throat and a typical scarlet tongue. There was no rash. Recovery was rapid. No further cases have developed in those immunized. A nurse maid who entered the school for training at that time developed scarlet fever the eighth day after entering the institution.

In a large state institution of 1,500 persons, where all susceptible persons, as determined by the Dick test, were immunized by this method in August, 1925, Dr. David E. McBroom, medical director, reports no cases of scarlet fever in the institution for the first time in his experience.

CONCLUSIONS

1. Positive Dick reactors can be immunized against scarlet fever streptococcus toxin.

2. Children under 8 years of age may be safely given 3,000 skin test doses with this method.

3. In young children immunity is effected within as short a period as eight days, which makes possible the suppression of an epidemic by active immunization.

4. In older children, while immunity is established more slowly, repeated Dick tests at three months and six months indicate a marked progressive immunization.

5. On observing the possibility of mild scarlet fever developing in negative Dick reactors, it becomes evident that the strength of the test material should be increased.

1. Larson, W. P., and Colby, Woodard: Proc. Soc. Exper. Biol. & Med. **22**: 540-550, 1925. Larson, W. P.; Huenekens, E. J., and Colby, Woodard: Immunization Against Scarlet Fever, J. A. M. A. **86**: 1000-1001 (April 3) 1926.

GROUP SUSCEPTIBILITY TO ACUTE, UPPER RESPIRATORY TRACT INFECTIONS

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A rather comprehensive review of the literature on the so-called common cold and upper respiratory tract infections of the influenzal type made by Townsend [1] of the United States Public Health Service indicates that "there has been little advance in any knowledge concerning its etiology, epidemiology, periodicity, or the establishment of definite symptoms, pathognomonic in its diagnosis." It therefore would seem that any study of possible factors governing the susceptibility to "colds" is worth reporting, since even negative conclusions help at least to narrow the field of investigation.

Smiley [2] of Cornell University in connection with a study of the incidence of "colds" among Cornell students, divided these men and women into three groups: (1) those having "colds" not at all or once a year; (2) those reporting two or three "colds" a year, and (3) those having four or more a year. A questionnaire was sent to groups 1 and 3 as representing students with relatively low and relatively high susceptibility to "colds." This questionnaire covered the factors of smoking, exercise, cold baths, hours of sleep, draft over the beds, kind of underwear worn, kind of footwear worn in wet weather, perspiration after exertion, constipation, exposure to dust or gas, mouth breathing, nose and throat operations, and family history in regard to "colds." The general conclusion drawn was that no real major factor was dealt with in the whole questionnaire. The differences in percentage between the two groups, so far as any of these factors were concerned, were too small to indicate that they affected more than slightly the susceptibility to "colds." The highest difference in percentage was 19, subjects in group 3 being that much more addicted to the use of woolen underwear (possibly used in an effort to avoid "colds" to which they were susceptible), and the only other factors giving a difference of over 10 per cent were history of nose and throat operations, history of parents having been subject to colds, and the habit of taking regular, violent exercise, all of which occurred more frequently in group 3 than in group 1.

This report suggested to me an investigation of the same sort concerning other possible factors. This study was based on the theory that the individual is made susceptible to upper respiratory tract infections by vascular changes in the mucous membranes of the nose and throat secondary to vasomotor disturbances of the whole body or to the effect of sudden changes in temperature and humidity of the air. I therefore sought information in regard to the methods of heating and the character of ventilation of the rooms in which the students spent a large part of their time. A questionnaire was mailed to all members of the student body who lived on or near the campus. About 2,500 cards were sent out, and 1,431 replies were received and tabulated, after those replies which were obviously carelessly or incorrectly made out had been discarded. Although the questionnaire form of investigation is not exact, such a method used with student bodies gives fairly conclusive results, if we allow something for the personal factor and use a large enough group for our studies. These men and women are of nearly the same age. They live and work and play under relatively the same conditions, and they are intelligent enough to give relatively correct answers. As was the case in similar investigations, under the general title of "colds" were included all attacks of rhinitis, pharyngitis, bronchitis, influenza or tonsillitis. As shown in tables 1 and 2, students are grouped according to the number of "colds" each year. For the sake of comparing figures it may be assumed that those having no "colds" or only one or two a year represent a healthy group as far as this type of infection is concerned, that those reporting three or four are moderately susceptible, and that those reporting five or more are highly susceptible.

TABLE 1.—*Percentage of Students Reporting Specified Number of "Colds"*

	Number of Colds Annually			
	None	1 to 2	3 to 4	5+
Stanford, men	7	41	31	21
Harvard, men	0.6	45	40	14
Stanford, women	9	60	23	9
Wellesley, women	7	50	36	6

TABLE 2.—*Percentage of Students Reporting Specified Number of "Colds" a Year at Stanford and Cornell*

	Number of Colds Annually		
	0 to 1	1 to 2	4+
Stanford, men	25	42	33
Cornell, men	15	58	26
Stanford, women	40	47	13
Cornell, women	19	61	20
Stanford, men and women	29	43	28
Cornell, men and women	17	60	23

The incidence of "colds" at Stanford is about the same as at Cornell and Wellesley,[1] and as reported by Townsend [3] in his survey of 679 students at Harvard. As pointed out by Townsend, the relative frequency of upper respiratory tract infections does not vary much from one part of the country to another. Although tables 1 and 2 show a slight percentage margin in favor of this locality, the difference is so slight that it cannot fairly be attributed to the difference in climatic conditions, which is so great. There are as great differences between the men and the women here at Stanford in their susceptibility to "colds" as there are between students from universities in different parts of the country. As at Cornell, the morbidity is lower among the women than among the men. Definite morbidity statistics available from our investigation at Stanford as compared with those at Harvard show that the average number of attacks annually per student is: Stanford men, 2.84; Stanford women, 2.09; Harvard men, 2.88.

Students were asked to report on the method by which their rooms were heated, it being presumed that they were exposed to atmosphere thus dried and heated for at least several hours a day. Nearly 60 per cent of the rooms were steam heated. Table 3 gives the percentage of men and women having a specified number of "colds" a year grouped according to the way in which their rooms were heated. It will be noted that there is no variation of more than 11 per cent in the susceptibility grouping.

1. Townsend, J. G.: A Review of the Literature on Influenza and the Common Cold, Supp. 48, Pub. Health Rep., Washington, 1924.
2. Smiley, D. F.: Acute Infections of the Throat and Respiratory System, J. A. M. A. **82**: 540 (Feb. 16) 1924.
3. Townsend, J. G.: Epidemiological Study of the Minor Respiratory Diseases by the Public Health Service, Pub. Health Rep. **39**: 2669 (Oct. 24) 1924.

The problem was approached from another angle, one which according to prevailing notions should have shown something. Students reported as to whether they

TABLE 3.—*Methods of Heating and the Percentage of Men and Women Having Specified Number of "Colds" a Year*

	Number of Colds				
	None	1 to 2	3 to 4	5+	Students
Steam heat	7	42	32	19	100%, 865
Hot air	7	53	28	12	100%, 151
Electricity	3	51	26	20	100%, 126
Gas heaters	4	48	28	20	100%, 54
Oil stoves	4	52	31	13	100%, 24
Wood or coal stove	11	53	23	13	100%, 124
Not heated	13	46	21	20	100%, 88

TABLE 4.—*Sleeping Quarters and Percentage of Men and Women Having Specified Number of "Colds" a Year*

	Number of Colds				
	None	1 to 2	3 to 4	5+	Students
Sleeping porch	5	49	28	18	100%, 348
Well ventilated bedroom	8	46	29	17	100%, 956
Poorly ventilated bedroom	7	37	34	22	100%, 127

slept on sleeping porches or in well ventilated rooms or in poorly ventilated rooms. Table 4 shows the distribution of "colds" with the students thus grouped. There is practically no difference in the susceptibility ratings of these groups, there being no percentage difference greater than 12. As a matter of fact, students using sleeping porches report slightly more "colds" than those using well ventilated rooms for sleeping purposes. Apparently the bleak wind swept sleeping porch is no more effective as a prophylactic against upper respiratory tract infections than is the morning cold shower or the wearing of galoshes in wet weather.

Students using rooms heated by coal or wood stoves had a slightly lower morbidity than those reporting other methods of heating, and, as stated before, those sleeping in well ventilated bedrooms had a slightly lower morbidity than those using sleeping porches or poorly ventilated rooms. In table 5 is shown the incidence of "colds" among students having the best combinations of room and sleeping quarters as compared with those having the poorest. Although the percentage differences are noticeable, they do not indicate that such factors have more than a very slight influence on the susceptibility of the individual.

TABLE 5.—*Percentage of Students Reporting Specified Number of "Colds" as Related to Combinations of Methods of Heating and Sleeping Quarters*

	Number of Colds			
	None	1 to 2	3 to 4	5+
Stove heat; well ventilated bedroom	11	53	20	16
Steam heat; poorly ventilated bedroom	6	38	35	21

Only one man reported each of the two combinations of gas heat and poorly ventilated bedroom and electric heat and poorly ventilated bedroom, and both reported five or more "colds" a year.

TABLE 6.—*Comparison of Incidence of "Colds" Before and After Coming to College*

	Men	Women	Men and Women
Less "colds" at college	36%	38%	36.4%
No change	45%	50%	46%
More at college	19%	12%	17.6%

This question of the susceptibility of the individual was approached from yet another angle, which has nothing to do with the etiology of the infection but is interesting in a study of its occurrence. Students were asked to report whether they had more, less or the same number of "colds" at home before coming to college. As shown in table 6, men and women react to the change from home to college in about the same way, although there is again a slight margin in favor of the women. About 80 per cent of all the students report the same or a smaller number of "colds" at college as compared with the number before coming to college.

This question of the change in susceptibility to upper respiratory tract infection was also studied from the point of view of residence. We wished to find out whether persons from certain climatic areas reacted better to the change to California climate than did those from other areas. These percentages and the number

TABLE 7.—*Percentages of Students from Different Sections of Country Reporting Lessened Number of Colds at College*

	Men		Women	
	Number of Persons in Group	Percentage Reporting Fewer Colds	Percentage Reporting Fewer Colds	Number of Persons in Group
California	804	35	31	279
Washington, Oregon	50	32	50	14
Idaho, Montana, Wyoming, Utah, Colorado	63	46	67	15
Arizona, New Mexico, Texas	20	5	86	7
Oklahoma, Nevada, North Dakota, South Dakota	18	28	50	6
Minnesota, Kansas, Iowa, Nebraska, Arkansas, Wisconsin, Indiana, Illinois, Ohio, Michigan	47	53	28	18
Missouri, Kentucky, Tennessee, Mississippi, Alabama, Louisiana, Georgia, Florida, North Carolina, South Carolina	9	33	100	4
Virginia, West Virginia, Pennsylvania, New Jersey, New York, Maryland, District of Columbia, Delaware	15	33	80	5
New England	17	29	100	1
Scattered	47	38	33	3

of persons involved vary so greatly that it is impossible to draw any conclusions. Nevertheless, the results are presented in table 7.

CONCLUSIONS

As a result of the tabulation of the reports as to the susceptibility to "colds" among 1,431 students at this California institution, the following observations may be made:

1. As pointed out by other investigators, the extremes of climatic conditions experienced in Massachusetts and New York State as compared with the more temperate climate of this vicinity are not major factors in the susceptibility to upper respiratory tract infections.

2. The incidence of "colds" is not markedly influenced by the various systems of heating used in the studies or living rooms of the students, although the percentage of those having a low susceptibility is slightly larger among the students using wood or coal stoves instead of steam or other methods of heating.

3. Whether the students use sleeping porches, well ventilated bedrooms, or poorly ventilated bedrooms for sleeping purposes does not materially affect the susceptibility grouping. Although the morbidity is slightly higher among those using poorly ventilated rooms, the difference is not great enough to warrant any definite conclusions.

4. Men and women react in about the same way to the change from home and other climatic conditions to college environment, 80 per cent reporting the same

number of attacks or less as compared with the number experienced at home.

5. The morbidity rate in upper respiratory tract infections is slightly lower for women in this group than for men. In fact, sex is apparently a greater factor in the susceptibility to this type of infection than is any other factor thus far considered.

THE ALKALINE TIDE IN ACHLORHYDRIA*

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It is well known that when duplicate gastric analyses are carried out the results of the two tests are often quite different. Not infrequently one test will show an absence of hydrochloric acid, while in another done at about the same time acid will be found. It has seemed worth while to try to develop some technic which would sort out the doubtful cases for further study, and so to avoid errors in diagnosis which may sometimes be of considerable importance. It seemed probable that an absence of the changes known as the "alkaline tide" in the urine might occur in cases of achlorhydria, and that urine studies might provide a method for the purpose.

The alkaline tide is a decreased acidity, or increased alkalinity, which is observed in the urine of most subjects during the day. The evidence seems to show that an increased alkalinity that develops during the daytime—disregarding differences in the reactions of the day and night urines—is most frequently caused by the secretion of acid by the stomach. Changes in reaction are also brought about by changes in the rate of respiration, by the ingestion of acid or base forming foods, and probably by the efficiency of the kidneys in excreting acid; but the marked, regular changes observed in normal subjects can almost certainly be

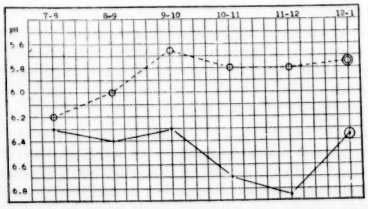

Chart 1.—Solid dots show to nearest 0.05 *p*H the average values in seventy cases in which hydrochloric acid was found in the gastric contents; hollow dots, those in forty-four cases in which it was not found. Egg, toast, milk and water were fed between 8 and 9 o'clock.

attributed to the secretion of acid gastric juice, and its subsequent neutralization and reabsorption.

In carrying out the studies of the alkaline tide, subjects were awakened at 7 o'clock and asked to void the urine secreted during the night. Specimens were then collected at hourly intervals until 12 or 1 o'clock. A breakfast consisting of two slices of toast, a glass of milk, a glass of water and an egg was fed at 8:30. No other food was allowed during the period, and acids and alkalis were forbidden. Subjects were asked not to drink water during the morning, but many of them ignored this part of the directions, without, as far as

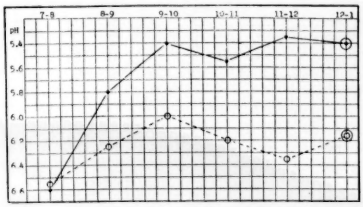

Chart 2.—Hollow dots show to nearest 0.05 *p*H averages in seven cases with traces of hydrochloric acid in the gastric juice; hollow dots, those in fourteen cases in which the evidence of its absence from the gastric juice was not considered convincing. Egg, toast, milk and water were fed.

we could tell, any significant effect on the results. No instructions as to the activity of the patients were given, and most of them got up, dressed, and moved about during the study. Differences in activity did not seem to cause enough effect on urine reaction to vitiate results. The hourly specimens were sent to the laboratory and the reaction determined by a colorimetric method.

All of the results obtained on patients who had gastric analyses and alkaline tide studies done at about the same time are given in charts 1 and 2. For the most part only one test was done on each patient, but there were eighteen duplicate analyses made, in only one of which was the average significantly different from the first test. In these, averages have been used. Five tides were omitted because the test was incomplete. Chart 1 includes results in all cases in which an absence of hydrochloric acid was found in a fractional gastric analysis continued for at least an hour and a half. There were forty-five of these cases, and in thirteen of them no 1 o'clock specimen was obtained; the last point shown on the chart does not therefore bear a correct relationship to the other values. Results in seventy cases in which acid was present—all that were studied except seven in which acid was present in traces only—are also given. In seventeen cases the last specimen was not obtained. The results of these determinations are expressed in terms of *p*H, a convenient method of expressing the hydrogen ion concentration, and increases in alkalinity are plotted toward the bottom of the chart. There is a distinct difference between the average values in the two groups of cases.

It has seemed desirable to suggest a description of changes which, in our opinion, show the presence of a tide. No entirely adequate definition can be given, for irregularities are sometimes encountered which are difficult of interpretation. It is not possible to use the reaction of the specimen collected before the meal is fed as the only base line, for this is frequently quite alkaline in reaction, probably as a result of changes in respiration attendant on awakening from sleep. The definition offered, which avoids this source of error and which lays emphasis only on changes in magnitude

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

such as we feel can be regarded as significant, is as follows: If any specimen is more alkaline than one collected earlier in the test by 1.0 p_H or more, or if any two specimens are more alkaline than an earlier one by between 0.5 and 1.0 p_H, a tide is present. If the average reaction of all specimens collected is alkaline, i. e., is more than 7.0 p_H, the absence of changes in reaction should be disregarded, and the test considered unsatisfactory; analysis of an alkaline specimen is not easily made correctly, and there is some evidence in our series that when the urine is alkaline changes are not as marked as when it is acid. Of the forty-five cases of achlorhydria shown in chart 1, only nine showed changes of reaction as great as those described above, and in only two of the tests was the average reaction alkaline. In twenty of the seventy cases in which acid was present in the gastric juice, tides were not found; but in eight of these the average reaction of all specimens was alkaline. By the definition given, the agreement between the results predicted and found in both series was almost exactly 80 per cent correct.

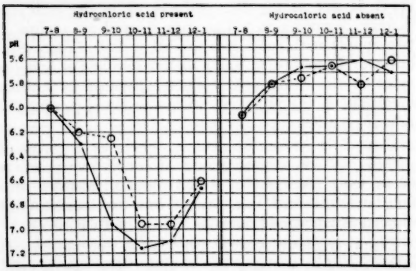

Chart 3.—Hollow dots show to nearest 0.05 p_H the average values after egg, toast, milk and water were fed between 8 and 9 o'clock; solid dots, after the same breakfast plus beefsteak were fed to the same subjects at the same time of day. Results in five cases with and seven cases without hydrochloric acid in the gastric juice are shown. The first value is the average of all results between 7 and 8 o'clock obtained in the cases.

While we feel that this agreement is sufficiently good to justify the use of the method as a check on gastric analysis, we also believe that adequate explanations of discrepancies encountered in about half the cases can be given from the results of the tests. In two of the cases in which tides were absent when there was hydrochloric acid in the gastric juice, gastro-enterostomies had been performed, and the stomach emptied rapidly through the openings. In these a very rapid reabsorption of acid products might well have overbalanced the effect of acid secretion. In two other cases the maximum acidities found in fractional tests were low—12 and 20 cc. of tenth normal acid per hundred cubic centimeters of gastric juice, respectively—and it is certain that the changes are dependent, not wholly on the presence or absence of acid, but on the actual amount of acid secreted by the stomach.

We believe that when a tide is present in the urine but hydrochloric acid is not found in the stomach contents, the gastric analyses should be viewed with suspicion. In two of the three cases in which a second fractional gastric test was done on patients when such discrepancies existed acid was found. In one of the nine failures included in the chart, large amounts of mucus were present in all specimens—a condition often associated with an apparent absence of hydrochloric acid which is not a true achlorhydria. In three of the others a total acidity of 20 or more cc. of tenth normal acid per hundred cubic centimeters of gastric juice occurred during the test, and in three others values of between 15 and 20 cc. were found. Since in 150 consecutive gastric analyses in which hydrochloric acid was absent the average total acidity was only 6 cc. of tenth normal acid per hundred cubic centimeters, it does not seem unreasonable to question diagnoses of achlorhydria based on such analyses as these.

In chart 2 are given the cases that could not be classified satisfactorily. The solid dots show seven cases with traces of hydrochloric acid present for a short time in a fractional test. The highest values found were:

Case number	1	2	3	4	5	6	7
Hydrochloric acid	10	3	2	7	21	10	8
Total acid	30	14	18	26	33	26	19

The case with the highest acid showed an achlorhydria very shortly afterward and will be described in detail later. No other values comparable to these were found in the study. Certainly such concentrations should correspond in their systemic effects with an absence of hydrochloric acid, and in only one of these cases was a tide as defined above found.

The dots represent fourteen cases in which we did not think the evidence of the presence of an achlorhydria convincing, as only results of analyses of single specimens, of vomitus, or of uncompleted fractional analyses were available. Seven of these patients showed a tide and seven did not. We feel that more complete gastric studies would have shown the presence of acid in a good proportion of them.

There is some evidence that the intensity of the alkaline tide varies with the kind of foods fed. It has seemed best to study the urine of patients after they have received a meal planned to stimulate the secretion of large amounts of hydrochloric acid by the stomach. Chart 3 shows the effect of two diets on five patients with and seven without hydrochloric acid in the gastric juice. Each patient received the breakfast already described, and in another test one that included beefsteak in addition to the other foods. When hydrochloric acid was present a slightly more marked tide developed after steak was ingested, but there was no difference in the two curves when hydrochloric acid was not found in the stomach. Tides were not present in any of these seven patients, nor in two others who received only the steak breakfast.

TABLE 1.—*Results of Observations in Three Cases*

Time	Case A, Normal		Case B, Normal			Case C*
7 to 8.....	5.5	5.5	5.7	5.4	6.6	5.3
8 to 9.....	6.2	5.9	5.8	5.6	6.9	6.2
9 to 10.....	7.4	6.9	6.3	6.2	6.9	7.0
10 to 11.....	7.4	6.9	6.7	6.0	7.2	6.7
11 to 12.....	7.0	6.7	6.6	5.8	6.5	5.9
12 to 1.....	6.3	6.4	5.7	5.8	6.0	

* Case C Gastric							
	Time.....	Res.	½	¾	1	1¼	1¾
	HCl.....	0	0	21	43	34	38
	Total.....	8	4	47	57	52	54

Table 1 is presented to illustrate the definition of a tide on actual results, and to point out some of the observations which suggest that a test should be repeated. Patients A and B were normal men with acid in the gastric juice who did laboratory work dur-

ing the tests, and who ate the standard (not the steak) breakfast. In case A both tests show marked tides, for in both the reactions of the third, fourth and fifth specimens are more alkaline than the first by more than 1.0 p_H. The first two tests in subject B show tides; in the first the reaction of the fourth specimen is more alkaline than the first by 1.0 p_H, and in the second one the reactions of the third and fourth specimens are more alkaline than the first by 0.8 and 0.6 p_H, respectively. In the third test on patient B no tide, as we have defined a tide, is present, but the form of the curve is essentially the same as the others on this subject. It is evident that the relatively low acidity of the first specimen is responsible for the absence of a tide as defined, and the result represents a study which should be repeated before a decision is given. C was a patient on whom a diagnosis of achlorhydria had been made elsewhere; in the urine test marked changes in reaction were noted, and in a gastric test done later hydrochloric acid was found.

TABLE 2.—*Results in Three Cases in Which Gastric Analyses Showed Hypochlorhydria*

Time		Case A		Case B		Case C			
Tide	Gastric	Tide	HCl	Tide	HCl	Tide	HCl	HCl	HCl
7 to 8	Res.	6.9	0	6.8	—	6.5	5	0	0
8 to 9	½	6.6	0	6.4	0	5.9	21	3	0
9 to 10	¾	7.1	0	6.5	0	6.3	11	0	0
10 to 11	1	6.1	7	7.1	5	6.3	0	9	0
11 to 12	1¼	5.3	17	7.2	8	5.7	..	0	0
12 to 1	1¾	5.1	0	6.4	0	...	..	0	0
	2¼	...	0	...	0	...	..	0	0
	2¾	...	..	...	..	...	..	..	0

Table 2 contains results in three cases in which gastric analyses showed hypochlorhydria. Those designated A and B were received after the charts had been prepared. Both show clearly an alkalinity in the first specimen with more acid reactions later; we have often observed this. In case B a tide is present by definition, for the fourth and fifth specimens are more alkaline than the second by 0.7 and 0.9 p_H, respectively. No tide is shown in case A. Case C was included among the ones that were not classified, and showed the highest acidity of any in that group. The form of the curve suggests the presence of a tide, but the changes are not great enough to conform to the definition given. The results of the gastric analyses, which were all done within a few months of one another, show why the case was hard to classify.

TABLE 3.—*Results of Observations in Seven Cases*

Time	Case A	Case B	Case C	Case D	Case E	Case F	Case G*
7 to 8.....	7.1	6.2	5.2	6.6	7.3	7.6	6.2
8 to 9.....	6.8	6.1	5.2	5.9	7.2	5.6	6.0
9 to 10.....	7.4	5.6	5.4	5.8	5.3	5.6	6.4
10 to 11.....	7.3	6.9	5.3	5.5	7.0	5.5	7.3
11 to 12.....	7.2	5.7	5.3	5.3	7.1	5.9	7.1
12 to 1.....	7.4	5.7	5.4	5.2	6.0	5.6	6.9

* Case G Gastric								
	Time.....	Res.	½	¾	1	1¼	1¾	2¼
	HCl.....	0	0	0	0	0	0	0
	Total.....	4	10	12	11	13	21	20

Patient A in table 3 excreted specimens with an average p_H greater than 7.0, and illustrates tests which we consider unsatisfactory. Changes simulating a tide are present, but they are not great enough to constitute one as defined. The patient had had a gastroenterostomy performed, and no other studies were done.

Case B illustrates another unsatisfactory test. By the definition a tide is present, but an increased alkalinity is shown in only one specimen, and this forms a rather abrupt interruption to an otherwise smooth curve. Such a result might come from a comparatively short period of overventilation, and should not, we feel, be accepted by itself. The case was diagnosed as achlorhydria elsewhere, and no further studies were obtained in our hospital.

Case C showed a perfectly flat curve with nothing resembling a tide. The patient was suffering from pernicious anemia, and refused to allow a gastric test to be performed. The very high incidence of achlorhydria in this condition is well known.

Case D shows another condition in which an achlorhydria commonly is found. The patient had carcinoma of the stomach, and it was considered inadvisable to carry out a gastric analysis. The result shows an increase in acidity in the first specimens, and no decrease later; i. e., there is no tide.

Case E shows the presence of a tide, although the curve is not as regular, perhaps, as is desirable for definite classification. The case showed an anemia in two counts with color indexes below 0.9. There was, however, a leukopenia, and a high percentage of lymphocytes in the differential counts. Because of cardiac involvement, the physician wishes to avoid passing the tube if possible.

Case F is shown because it illustrates a group of patients on whom the method of study may prove to be of use. The results, which show an absence of a tide, were obtained on a patient with carcinoma of the esophagus who could not pass a stomach tube.

Case G is shown because it did not fit into the classifications used in studying our results. The gastric analysis was done a year before the urine studies were made. It seems to us that the absence of hydrochloric acid noted in the gastric test cannot be accepted by itself because such a high total acidity developed. In the urine studies, a tide was found.

Changes in the reaction of urine known as the alkaline tide have been studied in two groups of cases, one with and one without hydrochloric acid in the gastric contents. The results show that the secretion of hydrochloric acid is of primary importance as a cause of such changes, for following the ingestion of an appropriate meal there generally is a decreased acidity present in the urine of normal subjects which is usually absent from that of patients who have achlorhydria or who secrete very little acid in the gastric juice.

An attempt has been made to define changes that constitute a tide so that the method can be used in the study of individual cases. By this definition a tide was absent in 80 per cent of the cases that showed an absence of hydrochloric acid in a parallel gastric fractional analysis, but present in the same proportion of cases in which significant amounts of that acid were present in the stomach. Although explanations could be suggested in about half of the 20 per cent of failures encountered, we do not feel that it is necessary to press them. We believe that the agreement is sufficiently good to justify us in recommending the method for use in selecting cases in which an apparent achlorhydria is found for further gastric studies before a definite diagnosis is made.

ULTIMATE RESULTS OF ESSENTIAL HYPERTENSION *

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Since the recognition and description of hyperpiesia, essential hypertension or vascular hypertonia by Sir Clifford Allbutt,[1] the condition has slowly been recognized as a clinical entity. By the term essential hypertension, we understand a condition in which the patient has a persistent elevation of the systolic, and usually the diastolic, blood pressure for which there is no demonstrable cause. In the early stages all the patients are without evident cardiac hypertrophy and without demonstrable renal lesions, as evidenced by the fact that the kidneys are able to dilute and concentrate; albumin is rarely present in the urine, and only occasionally a few hyaline casts are found; there is a normal phenolsulphonphthalein excretion, and the chemical components of the blood are normal except for a slight rise in the uric acid content. Eventually, the continued high pressure leads to cardiac hypertrophy and varying degrees of arteriocapillary fibrosis or arteriosclerosis, with perhaps a tendency to affect certain organs more than others.

REVIEW OF CASES

With this conception of the disease, a review of seventy-six cases of essential hypertension occurring in private practice is presented. These cases have been under observation for varying lengths of time, but no case belongs to the group which has not been under more or less constant supervision for at least from five to seventeen years. No attempt to select the patients has been made other than this requirement. During the period of observation, the majority of the patients have been seen at least four or more times in a year, while a few have been seen only once or twice. In all of the cases, at each visit a note has been made as to the blood pressure, the heart and the urine, and in a considerable number, phenolsulphonphthalein and blood chemical studies have been repeated. Many of the patients have received hospital care on one or more occasions during the progress of the disease, because of some unpleasant symptom or complication. In the fatal cases, all patients received hospital care with one exception.

The cause of death was verified by postmortem examination five times; in others, the bedside diagnosis seemed reasonably well established, since the patients had been under close scrutiny before and during the final illness. It is realized that this series is rather small, but it has been strictly limited to a group about which I feel reasonably certain of the data, and all cases of questionable renal origin or with other factors which might produce hypertension, such as frank endocrine cases, have been eliminated, with the exception of cases occurring in women at the time of the menopause. I have not included cases which occurred in diabetic patients. No attempt has been made to arrive at a definite date of onset of the hypertension; this would lead one into a speculative field far removed from this study, as it is well known that the condition may exist for years without symptoms.

* Read before the Section on Practice of Medicine at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Allbutt, Clifford: Disease of the Arteries, Including Angina Pectoris, London, the Macmillan Company, 1915.

Table 1 presents a distribution of the seventy-six cases by age, sex and present state. There are thirty-nine men and thirty-seven women, a rather higher number of men in proportion to women than usually occurs. Of this number, twenty-seven cases in men and twenty-nine in women occurred between the ages of 40 and 60. A very striking difference occurred in

TABLE 1.—*Ages of Patients*

Years	Men	Living	Dead	Women	Living	Dead
30 to 34	1	..	1	1	1	..
35 to 39	1	..	1	1	1	..
40 to 44	5	5	..	5	5	..
45 to 49	3	1	2	20	9	1
50 to 54	9	3	6	8	7	1
55 to 59	10	7	3	6	6	..
60 to 64	5	2	3	3	2	1
65 to 69	3	1	2	1	1	..
70 to 75	2	1	1	2	2	..
Totals	39	20	19	37	34	3

the mortality of the two; of the men, only twenty are living, a mortality of 48.7 per cent, while thirty-four of the women are alive, a mortality of 9.2 per cent, a difference in mortality in favor of the women of 39.5 per cent.

In table 2, the duration of observation is shown. One is impressed with the fact that fifty of the patients have been under observation for from five to seven

TABLE 2.—*Duration of Observation*

Years	Men	Living	Dead	Women	Living	Dead
5	13	6	7	7	6	1
6	8	2	6	11	11	..
7	3	3	..	8	8	..
8	2	1	1	..	..	..
9	5	1	4	2	2	..
10	2	2	..	3	3	..
11	1	1	..	2	1	1
12	3	2	1	2	2	..
13	1	1	..	..	..	..
15	1	1	..	..	..	..
16	..	..	..	1	1	..
17	..	..	..	1	..	1
Totals	39	20	19	37	34	3

years. After this time the number diminishes. An explanation of this is that other cases which might have been included in later years did not fulfill the requirements of this study, in that the available data following examination are not taken sufficiently often or are not accurate enough to be included in the list. During this five to seven year period of observation

TABLE 3.—*Complications Arising in Fatal Cases During Their Period of Observation (Not the Cause of Death)*

Eye: Arterial changes; edema of nerve; hemorrhages	7
Precordial pain or distress	11
Angina	9
Asthmatic attacks	3
Dyspnea on exertion	11
Transient attacks of numbness, paralysis, aphasia, unconsciousness	3
Cardiac extrasystoles	3
Cerebral hemorrhages	7
Prolonged attacks of dizziness	2
Evidence of renal impairment	2
Aortic insufficiency	1

of the twenty-four men, only eleven are living, a mortality of 54.1 per cent; whereas, of twenty-six women, twenty-five are living, a mortality of 3.8 per cent. This is decided and convincing evidence that essential hypertension in women is relatively benign during the first seven years in comparison with men.

Table 3 represents the outstanding complications arising during the period of observation of the fatal

cases which were not directly the cause of death, with the exception of the case of angina. Many of these complications were discovered during the course of the first examination, and a far greater number were the direct cause of the patient seeking medical relief. A single patient during the period of observation would frequently exhibit one or more of the complications. Attention is directed to the frequency of complications referable to the heart; these occurred oftener than is ordinarily supposed. Cerebral hemorrhage occurred in six cases; one patient had two apoplectic seizures before dying with the third stroke. One person developed an aortic insufficiency associated with a dilated aorta after being under observation six years. The recorded changes occurring in the eye are perhaps too few, as a careful observation with the ophthalmoscope was not made with as much diligence in former years as later; the findings recorded above were confirmed and frequently supplemented by confrères.

TABLE 4.—*Causes of Death*

	Men	Women	Duration of Observation, Years	Age at Death, Years	Previous Disability
Accidental	1	...	9	74	Cerebral hemorrhage; angina
Carcinoma of prostate	1	...	6	75	Angina pectoris
Carcinoma of bladder	1	...	6	61	Angina pectoris
Rupture of abdominal aneurysm	1	...	9	70	Cerebral hemorrhage; retinal hemorrhage
Cerebral hemorrhage	1	...	5	54	
	1	...	8	59	Angina; renal insufficiency; vertigo
	1	...	6	59	Angina; cerebral hemorrhage; dyspnea on exertion
	1	...	9	59	Two cerebral hemorrhages; angina; retinal hemorrhage
	...	1	5	63	Cerebral hemorrhage; angina
	1	...	6	70	Cerebral hemorrhage; angina
Uremia	1	...	6	63	Angina pectoris; retinal hemorrhage
Myocardial insufficiency	1	...	5	37	Retinal hemorrhage
	1	...	5	52	Retinal hemorrhage; angina
	1	...	5	52	
	...	1	11	58	Asthmatic attacks
	...	1	17	58	Asthma; angina
	1	...	5	59	Transient paralysis; cerebral hemorrhage; retinal hemorrhage
	1	...	5	62	Transient paralysis
Thrombosis of coronary artery	1	...	6	57	Angina pectoris
Angina pectoris	1	...	9	54	
Found dead in bed	1	...	5	39	Retinal hemorrhages
	1	...	12	65	
Total	19	3			

Table 4, which gives the cause of death with the distribution as to age and sex, is of interest in that of the twenty-two deaths, seven are from vascular accidents; nine are cardiac deaths; three are from causes unrelated to their essential hypertension, and only one is from uremia. A closer analysis of the cases of cerebral hemorrhage shows among the men that the average time of observation was very nearly seven years; in the patients dying with cardiac insufficiency, among the men the average period of observation is only five years, while among the women the average is fourteen years. This is suggestive evidence that myocardial failure as a cause of death among the men occurs earlier than cerebral hemorrhage, but that in the women it is a late cause of disaster. Of the seven patients dying because of myocardial defect, only three presented symptoms which would lead one to suspect that this would be the final outcome. Four of the six patients dying with cerebral hemorrhage had, during the course of the disease, previous apoplectic seizures from which they partially recovered. One of these patients had two previous strokes before the third caused a fatal termination. The deaths in this series from cardiac involvement outnumber those from vascular accidents, but the difference is not so great as to be very striking. The one death from uremia is quite significant in that evidence of renal impairment first made its appearance approximately two years before the fatal outcome, and after the patient had been under observation for four years. Two of the patients were found dead in bed, and there were no previous symptoms which would lead to a probable cause; postmortem examination was denied in both.

TABLE 5.—*Blood Pressure in Fatal Cases*

At Time of Observation		Last Observation Preceding Fatal Illness		Period of Observation,	
Systolic	Diastolic	Systolic	Diastolic	Years	Cause of Death
230	152	260	160	5	Myocardial insufficiency
210	156	230	160	5	Found dead in bed
186	142	240	160	5	Myocardial failure
220	120	220	140	5	Myocardial failure
196	...	220	130	11	Myocardial failure
240	140	260	134	5	Cerebral hemorrhage
200	120	210	120	8	Cerebral hemorrhage
208	116	216	130	9	Angina pectoris
168	130	164	100	6	Cerebral hemorrhage
240	...	226	130	17	Myocardial failure
190	116	190	120	6	Embolism of coronary artery
190	...	228	128	5	Myocardial failure
270	140	250	140	9	Cerebral hemorrhage
176	...	158	80	12	Found dead in bed
190	...	182	100	6	Carcinoma of bladder
220	100	214	140	5	Cerebral hemorrhage
170	80	160	70	5	Myocardial insufficiency
240	154	246	165	6	Uremia
230	130	172	100	6	Cerebral hemorrhage
212	114	160	100	9	Ruptured aneurysm
178	88	148	100	6	Carcinoma of prostate
194	98	160	80	9	Accident

Table 5 is an attempt to convey some idea of the blood pressure during the period of observation of the fatal cases. It is realized that such an attempt can be quite misleading, because it is well known that in practically all of these cases there is a considerable fluctuation in the pressure from month to month and from year to year. The blood pressure, which is given at the time of observation, is the lowest pressure obtained after the usual excitement of history taking and routine physical examination has subsided. During the period of observation and treatment, it is impossible to give an accurate account of the variation of the pressure in all of the cases, so that there is recorded only the blood pressure at the beginning, when the patient first came under observation, which might be called the established blood pressure of observation, and the last blood pressure recorded before the onset of the fatal illness. Some of these readings were made before the standard arm cuff was in general use, so that the established pressure in a few of the cases is too high. The

TABLE 6.—*Complications Arising in Living Patients During Period of Observation*

1.	Eye: Tortuous vessels; edema; hemorrhages; choroiditis	16
2.	Precordial pain or distress	7
3.	Angina pectoris	5
4.	Dyspnea on exertion	8
5.	Myocardial failure	3
6.	Cardiac asthma	3
7.	Cardiac extrasystoles	2
8.	Systolic murmur at apex	12
9.	Systolic murmur over aortic area	2
10.	Pulmonary edema	1
11.	Cerebral hemorrhage	6
12.	Transient attacks of numbness and paralysis	2
13.	Prolonged attacks of dizziness	6
14.	Other diseases requiring major surgical procedures	3
15.	Renal impairment	2

striking thing is that, of the twenty-three patients, twelve had a pressure of 200 or more at the time of the first examination, with a relative increase in the diastolic reading, and the pressure had a tendency to remain at a constant level or even to go higher until the fatal illness. One patient lived seventeen years with a blood pressure which was never found under 200. Of the twenty-three fatal cases, eleven showed a heart that was enlarged, as determined by physical examination

TABLE 7.—*Approximate Blood Pressures of Living Patients*

Duration of Observation, Years	Age	Sex*	Blood Pressure at Time of First Observation		Blood Pressure at Last Reading		Complications
			Systolic	Diastolic	Systolic	Diastolic	
5	32	♀	204	136	200	100	
5	40	♀	190	110	160	100	
5	40	♀	196	100	200	110	
5	41	♂	200	110	230	120	Retinal hemorrhage; myocardial failure
5	43	♂	166	118	180	120	Asthma; angina; cardiac extrasystole
5	44	♂	168	108	140	100	Asthma
5	47	♀	202	128	190	110	
5	48	♀	180	110	150	100	Cholecystectomy
5	48	♀	172	98	140	80	
5	54	♂	160	112	160	100	Gastro-enterostomy
5	61	♂	215	118	180	100	
5	70	♀	172	86	160	80	Dyspnea on exertion
6	39	♀	180	110	150	100	
6	44	♂	158	110	172	122	Retinal arteriosclerosis; dyspnea on exertion
6	44	♀	164	90	152	90	Retinal arteriosclerosis
6	47	♀	190	106	140	90	
6	48	♀	186	120	134	80	Retinal hemorrhage; exudates
6	51	♀	160	110	168	90	
6	53	♀	174	100	180	110	
6	55	♀	170	90	130	80	
6	58	♂	210	120	206	116	Cataracts; retinal arteriosclerosis
6	59	♀	160	80	146	80	
6	62	♀	214	130	160	80	
6	70	♀	180	70	150	80	
6	70	♀	168	90	110	70	Angina; marked dyspnea on exertion
7	43	♂	170	140	180	110	
7	44	♀	200	120	160	100	Attacks of transitory numbness; hemiplegia, monoplegia
7	46	♀	210	120	150	80	
7	51	♀	220	110	160	100	Retinal hemorrhage
7	51	♂	200	100	150	98	
7	55	♂	160	100	170	90	Retinal arteriosclerosis
7	56	♀	160	80	154	96	Retinal arteriosclerosis; menopause, 38
7	..	♀	192	96	154	96	Cardiac extrasystole; dyspnea on exertion
7	57	♀	190	98	140	90	
7	62	♀	200	104	186	114	
8	68	♂	260	160	150	90	Asthma; angina
9	46	♀	160	100	140	80	
9	50	♀	176	100	178	100	Extrasystole; retinal arteriosclerosis
9	55	♂	190	120	188	110	Angina; retinal arteriosclerosis
10	48	♀	204	110	160	90	
10	53	♀	180	...	164	124	Cerebral hemorrhage
10	56	♂	174	102	176	110	Prolonged attacks of dizziness; renal stone
10	56	♂	172	...	180	120	Angina
10	67	♀	196	100	140	86	Retinal arteriosclerosis; cerebral hemorrhage
11	46	♀	214	120	180	110	Retinal hemorrhage; vertigo severe; slight renal impairment
11	58	♂	180	...	170	120	Precordial pain; retinal arteriosclerosis
12	43	♀	210	...	150	90	Retinal arteriosclerosis; precordial pain
12	53	♂	290	...	240	120	
12	55	♀	180	...	160	100	Cerebral hemorrhage
12	56	♂	184	...	170	100	Cerebral hemorrhage; angina
13	49	♂	190	...	160	110	Cerebral hemorrhage; retinal arteriosclerosis, systolic at apex
15	51	♂	180	...	170	100	Cerebral hemorrhage; prolonged dizziness; cholecystotomy
16	46	♀	228	125	180	120	Retinal hemorrhage; transient monoplegia; cerebral hemorrhage; dizziness

* In this column, ♂ indicates male; ♀, female.

at the time of first observation, and sixteen gave evidence of cardiac hypertrophy before death; in nine cases there was evidence of dilatation of the aorta.

Of the fifty-four patients living, there are twenty men and thirty-four women. The complications arising in these cases, either discovered during physical examination or as a symptom causing the patient to seek relief, are shown in table 6. Symptoms and physical findings referable to the heart are much more common than those referred to other systems. Myocardial failure of a mild degree has occurred in three patients, from which they have sufficiently recovered to be about with a fair degree of comfort, six patients have had definite hemiplegias, which were equally divided between men and women. Four cases of angina occurred in men and one in a woman. Only two cases show evidence of renal impairment.

An attempt is made in table 7 to give an approximate idea of the blood pressure readings in the living patients; these observations are recorded as at the time of first observation and the last reading. Of this number, eighteen had an established pressure of 200 or over (six men and twelve women). Four of the patients have during the period shown a constant reduction in blood pressure below the relative figure of 160 systolic and with an approximate normal diastolic reading. Of the entire group, fifteen women and four men have a constant pressure now below 160. All feel well and suffer no discomfort, except one patient with a systolic pressure around 110; this patient's lowered pressure is due to myocardial degeneration, and on slight exertion she suffers with anginal attacks.

Of great interest is the group occurring in women from 40 to 50 years old and associated with symptoms referable to the menopause. Sixteen of the thirty-seven cases belong to this group; fifteen patients are living and one is dead. Of the fifteen patients, two have had leftsided hemiplegias; three have had retinal hemorrhages; one, precordial distress on exertion; two, retinal arteriosclerosis without hemorrhage, and in five cases the blood pressure, both systolic and diastolic, has practically returned to normal. Attention has frequently been directed by Riesman,[2] Cummings,[3] Wright,[4] and others to hypertension in this period of life in women and the fact that it is seldom associated with accidents.

SUMMARY

In a review of seventy-six cases of essential hypertension observed from five to seventeen years, the number of cases was about equally divided between the two sexes.

The mortality for the group of men was 48.7 per cent, and for the women, 9.2 per cent, a difference in favor of the women of 39.5 per cent. During the five to seven year period of observation, the mortality was remarkably higher among the men.

Myocardial failure occurred earlier than cerebral hemorrhage among the men. It occurred much earlier in men than in women.

Death from cerebral hemorrhage in a majority of the cases was preceded by a previous apoplectic seizure. The greater number of deaths occur because of heart and blood vessel weakness.

The renal involvement in the late stages of this disease is usually very slight, only one death occurring in the series because of renal failure.

Essential hypertension occurring in women about the time of the menopause is relatively benign and is

2. Riesman, David: Hypertension in Women, J. A. M. A. **73**: 330 (Aug. 2) 1919.
3. Cummings, R.: California State J. Med. **19**: 116 (March) 1921.
4. Wright, F.: M. Clin. N. Amer. **3**: 1735 (May) 1920.

associated with fewer accidents and complications than for a similar group in men.

No definite conclusions can be drawn as to the end-result in a given case from a study of the blood pressure alone.

No definite prognosis can be given from a study of the blood pressure, the prognosis depending on the integrity of the heart and blood vessels.

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CIRCULATORY TONICS VERSUS CIRCULATORY DEPRESSANTS

IN CARDIOVASCULAR RENAL DISEASE WITH HYPERTENSION *

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The title of my paper is somewhat misleading, because one might infer that I consider hypertension as a disease within itself and that the subject matter which follows sets forth data to substantiate those facts. Both presumptions are entirely wrong, because my whole purpose in this paper is to try to discourage that very thing by attempting to show that if one classifies his cases properly, the blood pressure will take care of itself.

About ten years ago, while dealing with cardiovascular renal disease in patients who come to Atlantic City from many sections of the United States and Canada, I became very much interested in the observation of three prominent facts: First, it mattered not just what type of this group of diseases the individual was suffering from, one and the most talked about symptom and dread in his mind was his high blood pressure. When any explanation was offered in trying to point out that the increased blood pressure might be in his particular case a physiologic necessity, there was invariably no further interest shown. Second, it made very little difference also just what was causing the hypertension; the chief and foremost remedy furnished by the family physician in treating the case seemed to be the nitrites or circulatory depressants in some form. Third, in many instances in which the physician furnished a letter of instructions to the patient explaining the salient points in his case, he usually laid the greatest emphasis on the hypertension. Moreover, the systolic blood pressure reading alone was usually given, and no mention was made of the diastolic pressure, which many clinicians had begun to feel furnished perhaps more information concerning the circulatory strain than the systolic did.

Feeling perhaps that the explanation for such a wide use of the nitrites in these cases lay in the fact that only the systolic blood pressure reading was taken, and that unquestionably these cases of hypertension were all placed in one large group, as being alike in character by many physicians, I made an attempt to classify them into several groupings, the results of which were published under the title "Importance of Careful Diastolic Blood Pressure Observations in Cardiac and Cardiorenal Diseases."[1]

Since that time these observations have been continued, and while scarcely no one speaks of the systolic blood pressure alone to day but mentions all three phases, the high, the low and the pulse pressure, the one interesting fact still remains; namely the nitrites are the chief remedy used in hypertension by many of our profession, apparently without regard to cause or type.

Therefore hypertension, while viewed by many as not being a disease within itself but an expression of the circulatory force or strain under which the heart must labor in order to carry on its work, is unquestionably not so viewed by many of us, but is looked on as being a distinct disease itself. This is unquestionably true, as will be dwelt on later, because of the methods of treatment pursued by many physicians in attempting to alleviate it.

The wide and extensive use of the nitrites or circulatory depressants in hypertensive cases, without regard to type or cause, leads one to feel that there exists a widespread fear that the use of the digitalis bodies or circulatory tonics in these cases would raise the blood pressure still higher than it happens to be.

In the face of this large group of patients with cardiovascular renal disease with hypertension, each one of whom presents a somewhat different clinical picture, yet many of whom depend on the nitrites or some form of circulatory depressant as his chief anchor of safety, one feels that if any single line of treatment can benefit all patients without regard to cause, it most probably is not the correct therapeutic stay in at least a few of them.

This led me to make a second attempt to classify these cases of hypertension under group headings due to causes, in order to see if additional light might not be thrown on the subject. During the last ten years, quite a large amount of data have been collected, and while not exact and wholly dependable, as many phases are not at all well understood, they may, I hope, assist in collecting further data on the subject to enable us ultimately to understand better this perplexing problem.

We owe a great deal in this field to experimental physiologists for their work done on the heart muscle function and for calling our attention to two of the most fundamental qualities of heart muscle action, which places it in a class by itself and perhaps forms the basis on which many of the circulatory problems may be worked out. I refer to the great necessity for the heart muscle to have constant blood supply and to rest, and its wonderful power to recuperate and maintain its efficiency when given sufficient relaxation and rest between beats. Moreover, it is the actual motor power back of all blood pressure readings high or low, and is the one source through which our information must necessarily come concerning circulatory tension in any of its forms. It does not matter whether it is weakened heart muscle, increased peripheral resistance or sclerosed kidney or vasomotor let-down that is at fault; the systolic force of the heart beat, as expressed on the blood pressure machine, and the diastolic pressure, as the extracardiac circulatory strain, are our only guides as to whether the blood pressure is hypotensive or hypertensive, as the case may be.

Using, therefore, the blood pressure readings as the motor expression of the circulatory apparatus in physiologic action, I have partially worked out the following groupings:

CLASSIFICATION

1. Hypertension without apparent cause, with diastolic pressure less than 100, as reported by Dr. Riesman of Philadelphia, which occurs in women about the meno-

* Read before the Section on Practice of Medicine at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Andrews, C. L.: J. M. Soc. New Jersey **19**: 33 (Feb.) 1922.

pause and which tends to right itself as the menopausal symptoms are alleviated.

2. Hypertension with a well sustained systolic pressure with a diastolic above 110, and whose diastolic falls to 100 or less and the systolic also falls, when rest and eliminative treatment are carried out.

3. Hypertension with a well sustained systolic pressure and a diastolic above 110, whose systolic falls under rest and eliminative treatment, but whose diastolic remains at or above 110.

4. Hypertension with a systolic pressure not well sustained, but which vacillates from 10 to 20 points on the blood pressure machine as the pressure it taken, with a diastolic about 110, both of which come down under rest and eliminative treatment, but whose systolic begins to vacillate again following slight physical exertion and the diastolic goes back to about 110.

5. Hypertension with systolic pressure well sustained and with diastolic below 100, usually found in highly neurotic persons of both sexes and which responds very little to any form of treatment, but remains high in spite of all one can do.

As time will not permit by taking up each type in detail, it is about the vacillating hypertensive type of patient whose whole mode of life is greatly hampered by fatigue, shortness of breath and incapacity that I speak most particularly.

As pointed out by Christian [2] and others, there is perhaps no type of case in internal medicine which will respond more readily to treatment than these will when properly recognized. Moreover, there is always a stage quite in advance of dilation or break in compensation when these patients can be greatly benefited before the circulatory symptoms, as usually given, are manifest.

Then, fundamentally and physiologically, what do these vacillating circulatory symptoms mean—blood pressure readings that do not register constantly on the blood pressure machine, but vary from 10 to 20 points as the systolic pressure is held at its maximal point? It is the language of a tired out heart muscle crying for help, one whose tone will not permit all contractions to register with the same force. Perhaps, as before stated, one of the most fundamental properties of the heart muscle is its ability to recuperate when given sufficient time to relax, but it must have rest to assure efficiency. In hypertension, this cannot occur both because of the great force the heart muscle must exert to keep up the circulation and because of the correspondingly high diastolic pressure, which adds increased resistance to the heart's efforts before the semilunar valves can be forced open at each heart beat.

It is not unlike starting one's automobile engine in high gear. The powerful motor, which can speed the car away if placed in first, second and then high, cannot do so if placed in high to begin with, because the load is too great. Nor can the heart muscle stand up under a high diastolic pressure which must be overcome each time the heart beats, before the circulation can be set into motion. In many of these cases, the diastolic pressure is as high as the systolic should be. The high pressure must come down; the muscle must have rest, or the inevitable will follow, and the usual sequelae of a failing circulation will ensue.

These patients do not need circulatory depressants to lower the hypertension, as the seat of the trouble is not in a restricted arterial bed with a heart pumping up against resistance, but is due to a fatigued, somewhat dilated, poorly toned up heart muscle, whose lack of contracting force has gotten itself into a circulatory hazard and cannot, unassisted, overcome it. What these patients need is rest, cardiac support to decrease the pulse rate, increase of the muscle force and nutritional diet.

As soon as the heart muscle regains its tone, the venous stasis will be overcome; the digestion will be improved and the hypertension will take care of itself by lowering both the systolic and the diastolic pressures.

I agree with Christian and others that next to auricular fibrillation, there is perhaps no type of case that will show more brilliant results from tonic doses of the digitalis bodies than these patients do.

These are not new thoughts, but are well known to many clinicians and are practiced by them every day. It is to the man who treats all of these cases of hypertension without regard to type with the nitrites or cardiac depressants, because he apparently views it as a distinct disease, that I wish to direct my remarks, as I feel that further emphasis on classifying these patients before treating them for blood pressure alone cannot be too forcibly made.

While the nature of my topic confines my remarks to hypertension as a diagnostic guide, it is by no means my purpose to imply that these cases can be diagnosed and the patients treated by the sole use of the blood pressure machine. Quite the contrary, as every patient with cardiovascular renal disease must have all the modern clinical and laboratory tests and check-ups made before one can say whether the heart muscle, the circulation in general or the cardiocirculatory renal let-down is at fault. If this is done, all the various types with hypertension as a part of their clinical picture will not be treated alike.

There is no short cut to godliness, nor is there any short cut to diagnosis. But he who understands the normal and is able to view the whole pathologic picture in so intricate a mechanism as the human make-up as a whole has his house in order for doing good work.

REPORT OF CASES

The following cases have been taken from both my private and hospital records, and an attempt is made to arrange them as nearly as possible according to type. Many may not be so classified on final analysis, but may fall into several groupings. They therefore are offered merely as a basis on which to work, particularly by men located where all the finer diagnostic tests cannot be carried out.

GROUP 1.—Number of cases, eighteen. Age range, from 40 to 51 years.

Chief Complaint.—1. None, but told she had high pressure. 2. Nervously upset, insomnia, fear of high pressure. 3. Hot and cold sensations, pain in back of neck and head.

Physical Examination.—Head, normal. Chest, normal. Abdomen, from normal to vague gastro-intestinal disturbances. Reflexes, normal to overactive. Blood pressure: systolic, from 160 to 190, well sustained; diastolic, from 70 to 95, well sustained.

Laboratory Tests.—Blood, normal. Urine, normal. Blood urea, within normal. Creatinine, within normal. Phenolsulphonphthalein, within normal. Wassermann, negative.

Results.—Omitting nitrites previously given and using corrective measures, sedatives and ovarian substance, in indicated cases, and rest and diet.

2. Christian, H. A.: Digitalis Therapy: Satisfactory Effects in Cardiac Cases with Regular Pulse Rate, Am. J. M. Sc. **157**: 593 (May) 1919; Digitalis Effects in Chronic Cardiac Cases with Regular Rhythm in Contrast to Auricular Fibrillation, M. Clin. N. Amer. **5**: 1173 (March) 1922; Tr. A. Am. Physicians **37**: 284, 1922; Digitalis in Cardiac Disease, Boston M. & S. J. **187**: 47 (July 13) 1922; J. Iowa M. Soc. **12**: 307 (Aug.) 1922.

Blood Pressure.—Systolic, from 120 to 155, well sustained; diastolic, from 70 to 90, well sustained.

General condition improved.

GROUP 2.—Number of cases, twenty-seven. Age range, from 46 to 77.

Chief Complaint.—1. High blood pressure. 2. No special symptoms, but told of high blood pressure. 3. Headache, dizziness and not feeling well. 4. Pains and pressure about heart.

Physical Examination.—Head, from normal to nose and throat congestion. Chest, normal. Abdomen, full and gaseous; evidence of poor elimination. Reflexes, normal to overactive. Blood pressure: systolic, from 165 to 195, well sustained; diastolic, from 90 to 110, well sustained.

Laboratory Tests.—Blood, normal. Urine, normal. Blood urea, within the normal. Creatinine, within the normal. Phenolsulphonphthalein, within the normal. Wassermann, negative.

Results.—Omitting nitrites or cardiac depressants; instituting rest, elimination and diet.

Blood Pressure.—Systolic, from 140 to 165, well sustained. Diastolic, from 80 to 100, well sustained.

General condition much improved.

GROUP 3.—Number of cases, forty-four. Age range, from 42 to 71.

Chief Complaint.—1. High blood pressure. 2. Hypertension found in routine examination. 3. Headache, dizziness, no endurance and pains in legs with weakness on walking. 4. Bounding pulse in head and chest on exertion.

Physical Examination.—Head, nothing of importance. Chest, from normal to increased cardiac dulness, bounding pulse and accentuated aortic second sound. Abdomen, normal, full and firm. Reflexes, from normal to sluggish. Blood pressure: systolic, from 170 to 220, well sustained; diastolic, from 110 to 120, well sustained.

Laboratory Tests.—Blood, from normal to secondary anemia. Urine, from normal to low gravity, hyaline and granular casts, occasional pus cell. Blood urea, from upper normal to increased retention. Creatinine, from normal to upper normal. Phenolsulphonphthalein, from normal to low elimination. Wassermann, negative.

Results.—Omitting nitrites and instituting rest, diet and elimination and tonic doses of digitalis.

Blood Pressure.—Systolic, from 140 to 168, well sustained. Diastolic, from 100 to 110, well sustained.

General condition much improved to slight improvement.

GROUP 4.—Number of cases, sixty-three. Age range, from 38 to 76.

Chief Complaint.—1. Shortness of breath and cough on exertion. 2. Indigestion and belching of gas. 3. Does not feel well and tires easily. 4. High blood pressure.

Physical Examination.—Head, from normal to a flushed appearance of face and mucous membranes. Chest, heart sounds, from normal to distant on auscultation; lungs, from normal to some fine crackling râles at bases. Abdomen, from normal to slight hepatic enlargement and gas distention. Reflexes, normal. Blood pressure: systolic, from 140-160 to 200-220, not well sustained; diastolic, from 90-100 to 100-110, not well sustained.

Laboratory Findings.—Urine, from normal to concentrated, very acid and trace of albumin. Blood, from normal to an increase in red cells and hemoglobin. Blood urea, within the normal. Creatinine, within the normal. Phenolsulphonphthalein, within the normal. Wassermann, negative.

Results.—Omitting the nitrites and instituting rest, elimination and diet. Blood pressure: systolic, from 150 to 190, better sustained; diastolic, from 95 to 105, better sustained. Return to work and gradual return of former symptoms. Put on tonic doses of digitalis.

Blood Pressure.—Systolic, from 140 to 174, well sustained. Diastolic, from 72 to 90, well sustained.

Great general improvement.

GROUP 5.—Number of cases, fourteen. Age range, from 34 to 62.

Chief Complaint.—1. High blood pressure. 2. Pounding nervous heart. 3. Nervously upset and unable to sleep.

Physical Examination.—Head, from normal to slight suggestive thyroid enlargement. Chest, from normal to rapid bounding heart. Abdomen, from normal to vague areas of abdominal tenderness. Reflexes, from active to overactive. Blood pressure: systolic, from 170 to 200, well sustained; diastolic, from 82 to 100, well sustained.

Laboratory Findings.—Urine, within the normal. Blood, within the normal. Blood urea, within the normal. Creatinine, within the normal. Phenolsulphonphthalein, within the normal. Wassermann, negative.

Results.—Omitting nitrites and instituting rest, diet and elimination. Slight improvement, but varied up and down without any permanent gain.

General condition not much benefited.

SUMMARY

Group 1 represents a type of case that will usually take care of itself and should give us no special concern.

The patients in group 2 evidently had a hypertension due to a toxic basis, which returned to within the normal when the bowels and kidney eliminated freely.

Group 3 seems to show a definite increase in peripheral resistance due to real changes in the cardiovascular apparatus.

Group 4 is encountered in that type of patient with slight hypertrophy and dilatation, with a resultant poorly toned up heart muscle that needs support to increase its tone.

Group 5 has some yet unexplained cause for the hypertension, which does not respond to treatment, and most probably has some endocrine imbalance as its background.

CONCLUSIONS

1. There is abundant evidence that many treat hypertension as a disease itself.

2. There is a widespread fear that digitalis raises the blood pressure and should not be used in hypertension.

3. These cases can be partially classified by watching the blood pressure in conjunction with treatment results.

4. Tonic doses of digitalis should be given in hypertensive cases of long standing to support the heart muscle.

5. Patients with hypertension of long standing do better if the blood pressure is not lowered too much.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. PAULLIN AND ANDREWS

DR. JOHN B. NICHOLS, Washington, D. C.: I wish to call attention to the usefulness of sodium sulphocyanate in the treatment of hypertension. Fourteen years' experience leads me to believe that this drug is the most efficacious one now available for the reduction of hypertension. It is used in doses of from 1 to 5 grains (0.065 to 0.3 Gm.) three times a day. Favorable results are not obtained in all cases, especially in those in which renal or other organic changes have become well established, but in a large proportion of the cases a great decrease of blood pressure can be effected which can be maintained for a considerable period. We are not unmindful of the fact that because of our ignorance of the etiology and pathology of hypertension, the treatment is to a large extent empiric. We realize that diet and rest consti-

tute the main parts in the treatment of the condition. We also appreciate that there are naturally and spontaneously large fluctuations in blood pressure which appear from time to time; also that the action of the drug may be transitory. In spite of all these conditions, however, we believe that there is a field for drug therapy for the reduction of hypertension. We believe that we can get this effect from sulphocyanate better than from any other drug we have used. The name sulphocyanate sounds formidable and dangerous; but there need be no apprehension as to any danger from it in the usual dose. The drug passes through the system unchanged and can be obtained quantitatively in the urine. In its chemical and pharmacologic properties, sulphocyanic acid is distinct from the deadly hydrocyanic acid group, and there is no danger of any conversion of sulphocyanic acid into prussic acid or cyanides in its passage through the body. The contrary change, that is, from the hydrocyanic to sulphocyanic, is far more easily effected both in vitro and in vivo. The sulphocyanates do have very potent pharmacologic properties in sufficiently large amounts. The lethal dose in guinea-pigs is from 200 to 300 mg. per kilogram of body weight; proportionately, the fatal dose in a person of average size would be from 15 to 30 Gm. As a matter of fact, 30 Gm. of ammonium sulphocyanate has been taken by a man with only comparatively slight results. One hundred grams of ammonium sulphocyanate has been taken with suicidal intent, and the victim died in the course of two or three days. In another fatal case an unknown amount of sulphocyanate was taken for suicidal purposes, and the victim died in the course of two or three days. The toxic results in experimental animals are mainly diarrhea, loss of body weight, and later intense spinal irritation, producing clonic and spastic conditions similar in every respect to the effect of tetanus and strychnine. In the ordinary therapeutic doses there need be no fear of toxicity. Nausea and gastro-intestinal upset are frequently produced after prolonged administration, but that can be controlled by reduction or discontinuance of the drug.

DR. H. A. CHRISTIAN, Boston: I should like to call attention to the large number of patients referred to by Dr. Andrews, whose chief complaint was "high blood pressure," and to ask whether you do not think this chief complaint should have been, "I had an injudicious physician." I should like very much to participate in a debate as to whether the discovery of blood pressure apparatus had been injurious or beneficial to humanity. I would take the side that, on the whole, it has perhaps done more harm than it has done good, and the reason for that is that many patients are disturbed by being told what their blood pressure is and would get along perfectly well if one treated them knowing their blood pressure and they being ignorant.

In regard to Dr. Paullin's paper, I think the important things to remember are that few of these patients die as a result of uremia or have manifestations of nephritis. I have accumulated data on a somewhat different basis, because I have taken the patients who have died in the hospital, having among other diagnoses high blood pressure. I have 131 such cases, seventy of which have been checked at necropsy. Only six, or 4.5 per cent, of those patients died of uremia or had extensive chronic nephritis. Twenty-five per cent died of something that had nothing whatever to do with the high blood pressure, so that if one has high blood pressure, one's chances are 1:4 of living out one's life not seriously disturbed by high blood pressure, and dying of something else. Twenty-five per cent died of cerebral accident, of course, largely cerebral hemorrhage. Thirty-two per cent died of cardiac failure. Twenty-five per cent had chronic myocardial failure without valvular disease, and I presume that the hypertension had a good deal to do with producing this condition. Five and three-tenths per cent died of cardiac infarction, and two had a dissecting aneurysm which was not syphilitic. Then there was a group of six cases of aortic insufficiency, and here probably, the hypertension had no particular part in causing death. The point I want to emphasize in the figures is that 25 per cent of the patients died of cerebral accident; 32 per cent died of cardiac failure which appeared to be referable to high blood pressure, and 25 per cent died of diseases that had no bearing whatever on the hypertension. The hypertension probably did not speed their death. Only 4.5 per cent died a renal death.

DR. E. G. GRAVES, Houston, Texas: In the group of cases that we have seen since September 1, 12 per cent have shown high blood pressure (that is, in excess of 150 systolic and 90 diastolic). The most striking feature of this group has been the fact that 50 per cent of the patients have been overweight. One or two per cent have shown retinal changes. I find it convenient to divide cases of hypertension into three groups, more or less from the standpoint of treatment. The first group is that which has been spoken of today as hyperpiesia. The second group is that in which hypertension is associated with arteriosclerosis, or, as some prefer to call it, diffuse sclerosis or atherosclerosis. The third group consists of hypertension cases with associated nephritis. I was gratified to hear Dr. Paullin separate precordial pain from the pain of angina pectoris. Precordial pain essentially means pain in the region of the diaphragm. Dr. Andrews' experience that spirit of glyceryl trinitrate and nitrates do little good in cases of hypertension corresponds with our own.

The main point in this group of cases is the fact that many patients, particularly those in the group of essential hypertension or hyperpiesia, are overweight. Life insurance statistics show that obesity is a very serious complication of hypertension. It behooves us to see that these patients have the best opportunity of living, and we can present that opportunity best by reducing their weight.

DR. WALTER SHROPSHIRE, Yakima, Texas: I am struck with the fact that the classification of the condition is not touched on in the field that seems to me to be most fruitful for future good. In classifying the hypertension cases, they have not separated those of nervous origin from those of an essential condition perhaps of the artery. I noticed in one of the reports of results that women around the menopause had hypertension which subsided when that period was passed and the women lived, while men around a similar age had hypertension that did not subside and they died. It occurs to me that the author failed to discriminate between one of nervous origin and the other of an essential arterial, perhaps, character, or chemical substances acting in the arteries or smaller blood vessels that resulted in continued onward and downward effects. I believe that when we come to that discrimination we shall be in a better field for study. Patients with a high systolic and diastolic pressure that does not change radically drift toward cardiorenal disease. Cases with an essentially weak or crippled heart, and in heart failure, and those with a powerful and compensating heart, go on to renal involvement. Some poison is put into the blood which poisons the arteries and lessens their elasticity. If the end is not apoplexy, the heart is overcome by work it is unable to do. If that organ stands up, the kidneys are the victim. Those are the cases of hypertension that cause us alarm. They might be classed as organic in their etiology, in contradistinction to those of a nervous origin, such as those occurring in women about the menopause and under emotional excitement. The latter, under a little rest and outdoor fresh air and freedom from the mental excitement and the knowledge that they have high blood pressure, promptly return to normal. The other class of patients, usually men of affairs who live a mental life and give small attention to what they eat or who eat more than they can digest, have a high blood pressure that is well established and resistant to treatment. I am inclined to think that the trouble lies in the digestive tract.

DR. LLEWELLYS F. BARKER, Baltimore: In regard to Dr. Paullin's paper and Dr. Christian's comments on it, it is my experience that people with high blood pressure, no matter whether it be so-called essential hypertension or other forms of hypertension, ultimately die in one of five different ways: (1) cerebral insult; (2) heart failure due to myocardial insufficiency; (3) coronary disease with angina pectoris; (4) uremia (less common), or (5) terminal infections. Dr. Andrews emphasized the desirability of supporting the heart

in these cases, independently of the existence of hypertension. Digitalis will sometimes lower the blood pressure instead of raising it. Myocardial insufficiency of severe grade can often be prevented by the early recognition of signs of the beginning of the disturbance. Whether or not it is feasible to carry out Dr. Christian's advice of not informing the patient of his hypertension is a question. If we do not inform him, somebody else will. At present, most patients know of their hypertension before they come to consultants at least. I have always maintained, accordingly, that psychotherapy (in the sense of explanation, the calming of fear, and education to hygienic living) is one of important measures to be applied in treating the high blood pressure patient.

DR. EUGENE S. KILGORE, San Francisco: Dr. Christian emphasizes the harm often resulting from patients knowing too much about their blood pressure, and Dr. Barker states reasons for frankly giving them the information. Both points of view are illustrated in a former patient of Dr. Barker's, an active lawyer of 65 with excellent physical status in every way except for moderate hypertension, which he had known for some years before; in fact, he visited Dr. Barker. Some time ago, on returning from a trip to the country, he seemed very much depressed and began discussing retirement from his profession, sanatoriums, etc., and it was clear that he felt the end to be near and intended acting the part of an orthodox invalid, all this without any new symptoms of any consequence. I was quite mystified until a few days later, when I learned the story from one of his law partners. While the patient was in the country he had called a physician for some trifling complaint, evidently a careful man, because he determined the blood pressure but said nothing about it. Now our penetrating legal observer noted the physician's failure to comment on the hypertension and quickly deduced from this and from a "look in the doctor's eye" all the evil forebodings with which he returned to San Francisco. The moral of this story carries us one step beyond Dr. Christian's advice. We should avoid not only unnecessarily alarming patients by talking too much about their blood pressures, but should even more carefully avoid giving the impression that we are unwilling to mention it. Since that incident I have used the blood pressure machine less often, at least in follow-up work; and, when I do, I put on, at the moment of getting the reading, a very bored expression, and, while the air is sissling out of the cuff, sideswitch the train of thought by some such inquiry as "how are your bowels?"

DR. CLARENCE L. ANDREWS, Atlantic City, N. J.: I merely wanted to emphasize the importance of not treating these cases of blood pressure as such. Dr. Christian emphasized also what I wanted to bring out. Those of us who practice in places like Atlantic City, who have friends out of the city who send patients to us solely for the purpose of having the high blood pressure cured, have to do something or lose our jobs. I try to divert the attention of my patient into some other line.

Blood Platelets.—The normal number of platelets in the blood may be taken as from 200,000 to 300,000 per cubic millimeter. The estimation of the number is subject to a large margin of error, and only large variations can be definitely recognized. It is, however, apparent that the number of circulating platelets is very susceptible to factors influencing them, and it may vary with great rapidity. It may be accepted that the function of the platelets is concerned with preventing the escape of blood from the vessels, and that in fulfilling this function platelets are withdrawn from and lost to the circulating blood. Hence in hemorrhagic conditions the number of platelets is influenced first by the group of factors already discussed, which affect the red and white cells, including the chronic and immediate extent of the hemorrhages, and the condition of the bone marrow and spleen; and by the withdrawal or consumption of platelets resulting from their attempts to check the hemorrhages. It has long been known that there is a marked decrease or even complete absence of platelets in cases of hemorrhage of the type of purpura hemorrhagica.—Tidy, H. L.: *Lancet*, Aug. 21, 1926.

THE FAMILY PHYSICIAN'S PLACE IN THE INSPECTION OF SCHOOL CHILDREN

WITH ESPECIAL REFERENCE TO THE RURAL SITUATION *

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What is the ultimate aim, not the speculative ideal but the reasonable attainable goal, in the inspection of school children? Have we not the right to hope that some day virtually every child will be, as he has a right to be, made fit to enter school with a healthy body essential to normal development?

For endless generations, the schools have had to try to teach the physically unfit. Is it logical, is it reasonable, is it necessary, that this should be so? Cannot we find some plan for changing this condition, a plan that will appeal to all agencies interested in the child—to the home, to the school and to the church, but most of all to the physician, who, in the final analysis, must be the real factor in carrying out any such plan?

Necessarily, this paper will have to be somewhat discursive; but I will endeavor to show three things: first, that the present general method of caring for the health of school children is neither practical nor permanent; second, that it is possible to formulate a plan which will be both practical and permanent, and, third, that the family physician has a very definite place in such a plan.

A SURVEY OF MEDICAL INSPECTION IN THE UNITED STATES

To obtain an idea of this wide field, it may be well to give some facts that have been collected and published in the United States Public Health Bulletin 110. This bulletin is valuable in that it gives an outline of what is required and also what is overlooked. It gives no facts relative to results; but, year by year, results are being demanded, and requirements not upheld by results are being subjected to the severest and most unfriendly scrutiny.

For my purpose in this paper, the tabulation under the heading "Extent and Character of Medical Examinations" is particularly interesting. It shows that medical examination of school children is specified in thirty-two states, the District of Columbia and Hawaii; and among these thirty-two states is Virginia. Now the fact is, as I shall show in more detail later, that Virginia does not specify a medical examination. I have already heard from directors in other states, and from their letters I feel safe in saying that a large number of the states so set forth as requiring medical examination do not require it. However, thirty-one states do designate who shall administer the law relating to the inspection or examination of children. Twelve states designate no central authority to administer the law; it is left to the enforcement of individual counties or cities.

Now, according to the bulletin, twenty-three states have inspection made by persons with medical training. In states in which there are a goodly number of full-time health officers, a supply large enough to guarantee a sufficiency of visits to each school and a sufficient

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* Read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

stay at each visit, medical inspection or medical examination might conceivably succeed; but is this the most desirable method of securing results? Certainly it is not a desirable way for states with a sparsity of physicians and with an insufficiency of full-time health officers.

But why should a physician be expected to move his workshop to a lay workshop and there, either for pay or without pay, either with poor equipment or with none, be expected to prostitute a scientific knowledge and ability to an inefficient, unscientific, hasty, incorrect procedure called "medical" only because it is performed by a licensed physician? Every physician knows that the so-called medical examination as performed in the average school room is a delusion and a folly. It is not an examination. It is a bare inspection. Better than any one else, the physician knows how nearly it is worthless.

Having studied this public health bulletin, I naturally desired to find some nation-wide results of these varied laws, so I wrote to the commissioner of education asking for reports on state-wide activities under the child hygiene laws. This was the response:

> The Joint Committee on Health Problems in Education brought together in 1925 all the available statistics with regard to defective vision of school children. The state and city reports compiled total 4,997,183 examinations. [This is 20 per cent of the total number of children—approximately 20,000,000—in the United States.]
>
> So far as I know, there has been no compilation on so large a scale of data as to other defects. Of recent state-wide statistics you will be interested in those from New York of 595,206 (76.9 per cent of all school children) examined in 1924, a report of which you will find in the *American Journal of Public Health*, April, 1925, p. 305. You are, of course, familiar with the annual reports of the examinations made in the schools of Virginia. No other state-wide reports have reached this office.

I have received some reports from states and cities that have medical inspection, and these show a curious approach to unanimity. We see an increasing number of children inspected or examined, and, in some cases, of corrections made. But one wonders why a state or city should point apparently with pride to its large number of physically neglected or defective children. The cause for pride should be the annual decrease in the number of these handicapped children and in the increasing number of physically fit children. Intelligent educators in many parts of the world agree that one cannot possibly teach a child anything until the child has been put into the condition physically fit to receive the teaching. Why should a public school or other institution supported for the very definite purpose of educating the youth of the community have to lose time from its work to get its pupils made physically capable of receiving the instruction for which the taxpayer is paying?

If, in our state, we should not be able to show to our legislators when they meet that our school inspection has resulted in sending thousands of children to family physicians, to medical specialists or to dentists, and that corrections have followed such visits, I greatly fear that we would be unable to secure funds for the continuance of our work.

THE VIRGINIA PLAN

Since the letter from the commissioner of education mentioned above referred me to my own statistical report of the physical inspection of school children in Virginia, I can do no less than give a brief summary of that work since the final passage of the West law, in 1920.

This law has been jointly administered by the two state boards of health and education. It carries points relative to physical education (which I will not discuss here), and to the health of the children in the schoolroom, as follows:

1. The teachers shall be instructed in the fundamentals of safeguarding the health of their pupils by securing healthful environment, by control of defects, and by inculcating health habits.
2. The pupil shall receive an annual health inspection to determine his physical fitness.
3. Any physical defects thus brought to light shall be corrected and, since the logical person to encourage corrections is the public health nurse, it is proper that the employment of such auxiliaries to education should be aided by means of financial assistance to counties employing them.
4. The children shall receive health education and physical education as a part of their course of study.

At the time the law was enacted, several teacher-training schools offered courses in hygiene; but these courses did not include actual practice in physical inspection; consequently, few teachers followed any definite health program in the school curriculum, and few children received special attention in regard to their health.

One of the main features of the Virginia plan at present is requiring every teacher to make a physical inspection of every pupil at the beginning of every session and of every pupil who may enter school after it begins.

Table 1 shows how we differentiate between a physical inspection and a medical examination, and it will be noted that the inspection is to be made in the schoolroom and the medical examination at the physician's office.

TABLE 1.—*Differences Between Physical Inspection and Medical Examination of School Children*

Physical inspection in the schoolroom is made by nurses or teachers, who report only on the following:	Medical examination is made by a physician at his office to determine functional or organic defects of the following:	
Vision	Eyes	Nutrition
Hearing	Ears	Glands
Mouth breathing	Nose and throat	Heart
Teeth	Mouth	Lungs
Skin eruption	Skin	Abdomen
Posture	Back	Kidneys
Height	Feet	Blood
Weight		Nervous system
Underweight		

We do not allow ourselves to be satisfied with untrained intelligence as a requisite for this physical inspection. We train our teachers carefully to detect obvious defects, but charge them specifically to avoid diagnoses or suggestions of defects that are not obvious. They do, however, make every effort to induce parents to consult an oculist, a dentist or the family physician, as the case may indicate.

In 1921, the state board of health formulated a course in physical inspection and school hygiene embodying the requirements of the West law. This course was approved by the state board of education, which made it a necessary part of the training of all prospective teachers and a requirement for all teachers applying for certificates. The course covers the following points:

1. Physical defects and their control.
2. Communicable diseases and their control.

3. Health instruction, including personal hygiene and prevention of accidents.

4. Care of the school plant.

Five years were allowed (to Sept. 1, 1925) for all the teachers in Virginia to fulfil the requirements of the West law. During this time, approximately 3,000 teachers a year received instruction in how to safeguard the health of children in the schoolroom. This was secured through one of the following agencies in Virginia: colleges; summer school courses; extension courses of colleges; correspondence courses given by one college and by the state board of health.

Today all students preparing to be teachers in the institutions offering teacher training are receiving this course. At the end of the five year period, Sept. 1, 1925, it is safe to say that approximately 95 per cent of the 16,630 teachers in Virginia, both urban and rural, had either fulfilled or were in process of fulfilling the requirements of the West law, and many of the division superintendents had specified this point as a definite qualification for receiving appointments in the country schools.

We hold that the annual inspection of every child in the school is properly the work of the teacher; and we believe that the results in Virginia have justified our judgment. It is curious indeed how emphasis has changed in regard to this inspection. The first year emphasis was placed on the number of counties that had teachers making the inspection. This was interesting but inconclusive. The next year emphasis was laid on the number of children inspected. This was more interesting and less inconclusive. The third year, chief emphasis was laid on the number of defects found. Now we began to approach the time when we might hope for results.

A year ago we began to ask for the number of children having defects corrected, the number immunized against diphtheria and the number vaccinated. The report for the year is given in table 2.

TABLE 2.—*Report and Result of Examinations*

Number enrolled in schools	443,950
Number inspected	410,936
Number with defects	262,077
Number with one or more defeects corrected	69,843
Number immunized against diphtheria	17,342
Number vaccinated against smallpox	42,441

The physical inspection work of the state is done in thirteen cities and thirty counties under the direction of nurses, and in seven cities and seventy counties by the teachers without supervision.

Today, the pride in the program is not in the individual work of the teacher, however important that may be, but in the completed cycle—defect found, parent interested, physician employed, defect corrected—then back goes the child to school physically fit to receive his education, an asset to his state instead of a liability.

A MINIMUM STANDARD FOR PHYSICAL FITNESS

We are aiming toward standards of physical fitness in Virginia. Twenty of our pediatricians participated in the formulation of a standard which, until we find something better, we have adopted. This is the standard:

1. Good nutrition. (*a*) Not more than 10 per cent below or 20 per cent above average weight for height and age. (*b*) Firm musculature and subcutaneous tissue. (*c*) Hemoglobin not below 75 (Tallqvist scale).

2. Eyes: 20/20 vision with no symptoms of eye strain or corrected to 20/20 vision, with glasses if necessary, and with no organic lesion which impairs function.

3. Accurate hearing, with no malformation or chronic diseases.

4. Free nasal passages. (*a*) Absence of mouth breathing.

5. Healthy throat. (*a*) If tonsils are infected or are the cause of other defects, they must be removed.

6. Clean teeth with corrected defects and corrected malocclusion.

7. No glandular disturbance, such as tuberculous adenitis and hypertrophied thyroid.

8. Fully compensating heart, with no organic lesion.

9. No disease of the lungs, such as tuberculosis, bronchitis or asthma.

10. No abnormal defect, as hernia, palpable spleen or enlarged liver.

11. No intestinal infestation, as parasites.

12. No major orthopedic defects: erect posture. (All minor orthopedic defects corrected, as flatfoot and postural curvatures.)

13. Skin and scalp free from parasitic and other infections or serious abnormalities.

14. Absence of organic or functional nervous disease.

15. Protection against smallpox, diphtheria and typhoid.

The pediatricians had two additional points in this standard. These necessitated genital examinations and mental tests. We did not consider it wise at the present time to include the former, and for the latter we were not adequately supplied with mental specialists.

Of course there are difficulties in the way of attaining this standard of physical fitness. Our trouble in Virginia, and possibly this is the trouble everywhere, is the difficulty of interesting parents and making them realize their responsibility for the health of their children. If the child is sick enough to go to bed, they at once summon a physician; but if the child is apparently well they never think of insuring the child's health. We have to drive that fact into their consciences. Thousands of parents have had this thought suggested to them through our lectures, bulletins, child welfare conferences, mothers' classes and the correspondence course for mothers which was established three years ago by the state board of health under the Sheppard-Towner act. Other agencies are assisting in parent education, approaching the subject from various angles. We are gradually overcoming this factor of inertia. We are creating interest in the essential place, the home; but I regret to say that the average family physician is not yet sufficiently awake to the situation. Many intelligent mothers, admitting the lack of medical supervision, say, "The doctor laughs at me and says I am a foolish mother for wanting him to examine my well child periodically."

I think it is universally admitted that from the point of view of his entire life, the first years of the child are the most important. As a twig is bent so is the tree inclined. Trifling tendencies in infancy may easily grow into hampering defects in later years. It is this realization of the value of early work with children that has made us include within our plan definite efforts to create better standards for the preschool child with the view of sending him into the classroom physically fully fit. So, necessarily, we solicit, or even entreat, the help of the family physician; for only through periodic medical examinations can we know with certainty whether there are defects to be corrected or no defects at all.

Except in the case of the very poor, the duty of making these examinations should not be the function of a public paid health official; it is the province of the family physician, who is obviously the person best qualified to take this place in the child welfare program. In Virginia, we want this place definitely held for him, and we do not wish him to waste his precious time in the schoolroom. We do not believe that it requires a medical education to give superficial tests of vision or hearing, to make casual inspections of the teeth, or to weigh and measure a child; these things can be done by the teacher; and if we did so believe, there would not be in many counties enough physicians available for this work alone. The more the parents are educated in our line of endeavor, the more they realize that trained teachers can make satisfactory inspections, and the more readily will they heed the teachers' suggestions to send their children to physicians for complete medical examination and for corrective work.

It is not neessary for me to state that the rural physician is fast disappearing. The hardships attending country practice, bad roads, no amusements, poor pay and slow collections—all these make him inclined toward city practice, gradually leaving the country with a distressingly insufficient number of competent physicians.

We want good medical men for our rural districts. We believe that the strength of the nation is in the country-grown boy and girl. We want to keep the country children well and strong. We want our schools, our public health officials, our parents and our medical practitioners to put their minds on a program to insure this, which can be done only by initiating in the home regular medical supervision. I call on the practitioners of the American Medical Association to help foster such a program and to study this new health movement that is sweeping from coast to coast and from Canada to the Gulf—all over the world, in fact.

At the session of the American Medical Association in Atlantic City last year, I heard one of the speakers give a schedule for periodic examinations which was, as well as I can remember, as follows:

From birth to 6 months, see a physician every month.
From 6 months to 2 years, see a physician every three months.
From 2 years to 20 years, see a physician every six months.
From 20 years to 40 years, see a physician every one year.
From 40 years to 60 years, see a physician every two years.
From 60 years to 80 years, see a physician every one year.
From 80 years to 100 years, see a physician every six months.

This is not accurately quoted, perhaps, but nearly enough to give the idea. Who is to give this medical service but the family physician? If he fails to give it to the mother who seeks it for her children, to whom will she go? With the continuance of the program in Virginia, in ten years an enlightened parenthood will be demanding this service of the family physician. How will he respond? Is he going to be ready?

The children of today are beginning to demand of their parents that their defects be corrected. The children of tomorrow will demand that their defects and diseases be prevented. It is therefore to the family physician that we turn for sympathetic cooperation in caring for the mother; in preventing sickness among infants and preschool children; in correcting any physical defects, and in maintaining the health of the school child.

Who enjoys to the greatest extent the affection and confidence of the family? Certainly at one time the family physician did. Has he allowed this priceless advantage to slip away from him? Partly, yes; entirely, no. What he has lost he can regain; and he can even add to the prestige that was his. It is a far more wonderful privilege that he has today than the one he had forty years ago. He can now prevent; he could then only cure. The torch is yours; hold it high!

ABSTRACT OF DISCUSSION

DR. WINNIE M. SANGER, Oklahoma City: Dr. Brydon's method, which we term the "Virginia plan," has been broadcast in our state for the last two years. Having been a medical inspector in the public schools or in the state university for nine years, I know that the teachers do not value the teachings of health that the medical examiners impart. I know, too, that as soon as health teaching is done by the teachers themselves and health is recognized as much a part of education as art, music and science, we shall have some appreciation of what physicians are trying to do. I have found that when teachers are in sympathy with this work, we get results. We have two or three concrete plans in Oklahoma that we use in the grading or rating of health. One is the sorority plan, especially popular with the "junior highs." After the medical inspection has been completed, those whose health is satisfactory are organized into a club, like a sorority, where each standard child takes a substandard pledge, "and thus becomes personally responsible for the condition of his health." We are "popularizing health" by this and other methods in Oklahoma schools.

DR. H. I. GOSLINE, Dallas, Texas: Dallas has put on a health program which has been presented to the public in the words, "Program for Physical Inspection." That brings a certain train of difficulties. These difficulties arise from an organization known as the American Medical Liberty League which, so far as I can find out, is some kind of "anti" organization—antivaccination, antivivisection, anti-this and that organization. According to the statements of its representatives locally, it has secured permanent injunctions in a number of different states against the medical inspection of school children; and in Dallas it has just succeeded in getting a decision which amounts to a permanent injunction. An appeal has been made against this decision. The organization locally is known as the Public School Protective League. It seems to me that if that sort of thing is going on throughout the United States a word here might forewarn, and you know the result of being forewarned. I think that by saying we are teaching public health, or physical education, or something like that we might be able to do the same work and circumvent the "antis." I do not know whether the law in any state specifically states what is education and what is not. I do not know that the law in any state says that the three R's constitute education and that everything else is not education. Therefore, we might be within the law and still teach physical education, while from a technical standpoint physical inspection might be construed as being a misappropriation of taxpayers' money; but that is a stand on which these people are able to rest. Another point is how to "get it across." We have done it here partly through talking to the Parent-Teachers' Association, and out of that work I understand a part of the national Parent-Teachers' Association work has developed a preschool age study program in which these principles are studied. And over and above that come the education of the parent and the opinion of the parent to get behind the work, and, of course, if you do not have the opinion of the parent you cannot get very far. That has also led to a combination here between the preschool study groups of the Parent-Teachers' Association and the health committee of the Moth-

ers' Council which puts on in the summer what is known as a summer roundup in which the preschool children who will enter school in the fall are studied by physicians and others, and are gotten into physical shape before they enter school at all. In connection with the summer roundup it is proposed to put on a mothers' institute at which lectures are given on these subjects to the mothers while their children are being examined, and at the same time provision is to be made so that the mother can watch the examination of her children if she cares to. I do not need to stress the educational value of that sort of thing to the mothers, and the support it should give to the health program in the schools.

DR. FELIX J. UNDERWOOD, Jackson, Miss.: In a number of states the medical examination of school children is under the board of education, and in other states it is under the board of health, and in still other states under a joint service of the two departments. In my opinion, it should be under the board of health in all states. At first this service was inaugurated for the purpose of controlling communicable diseases, and in recent years the scope has been extended to that of locating defects and making provision for the correction of them. It certainly is of little or no value to make these inspections or examinations and not have follow-up work to secure the corrections on the defects found. As a rule, the inspections or examinations are limited to the ears, eyes, nose and throat, teeth, gums, orthopedic defects and nutrition, and only very recently has the mental side been given some attention. Dr. Brydon has well said that we do not have the machinery to conduct mental examinations. We have not got it my own state. I am sure that only a few states have it. In my own state we have a few people who are doing this work with absolutely no knowledge of mental conditions or mental diseases, simply making parrot-like tests which amount to very little. I am afraid that I am not as enthusiastic about the teacher in this field as Dr. Brydon is. This work should be done for the teacher and not by the teacher in most instances. In counties having full-time health departments medical examination of school children can be carried on very nicely, and in between the medical examinations, which should be held once in two or three years, the public health nurse and teacher could carry out simple inspection work. Much has been said here today with reference to the physician. We reluctantly admit that too many physicians have not shown the proper interest in this work. As a rule, some health worker from the board of health will go into a school community and the homes and arouse an interest on the part of the mother and teacher, and finally they are able to secure the cooperation of the physicians of the community. The physician is not entirely to blame in this matter. He has not been called on in the years past to render this sort of service. Now it is demanded of him and he is having a hard time adjusting himself to the new order of things. County health department officials are somewhat to blame for the practitioner of medicine taking so little interest in these problems in many communities. We have taken for granted that he knew as much about preventive medicine and public health as we did; that he would at once grasp the situation and have an appreciative understanding of what it was all about, and too often we are disappointed. This work ought to be explained. This and all other health work should be explained to the physicians of the community first, and when it is explained in the right way, a majority of physicians will assist in conducting a well balanced community health program.

DR. MARY EVELYN BRYDON, Richmond, Va.: I should like to say to Dr. Gosline that we have not had any injunctions started against us in the health work of the schools. We have had a great deal of violent protest on the part of the teachers, but we have been able to get them to come around, and most of them are very enthusiastic about doing this work. We also feel that this preschool roundup is most important, and we are attempting to carry that out in Virginia by getting the several superintendents in the counties to issue a call for preschool children who are going to enter school next fall to come to a certain registration place where the physicians will be, preferably the local physicians if we can persuade them to come out and do the work. They will be asked to make the medical examinations of the children and probably vaccinate. In regard to Dr. Underwood, I see we are hopelessly disagreeing on the subject of getting the teacher to do the inspection. If we waited until physicians or health officers and nurses made an inspection in the school room we should probably wait many hundreds of years. We have 100 counties, and in sixty-nine counties we have no health officer and no nurse to do this work. The teachers themselves are doing it; and the teachers are getting the children to go to the family physician. In one county, quite a small one, the teachers have secured 625 corrections through her own efforts by getting the parents to take the children to the physicians, and I think that these results are well worth while. I think it is wise for us all to keep in mind what we really are aiming at. After all, perhaps, it does not matter who makes the inspection in the school room just so we get the children physically fit, so that we get some one to point out the fact to the parent that it is their responsibility to send physically fit children to the school to be taught. It is the parents' duty and responsibility, and if we can get that fact over to the parents, eventually the parents themselves are geing to force the family physicians to "get on the job."

VOMITING IN INFANTS

A CLINICAL STUDY OF DIAGNOSIS AND TREATMENT *

DAVID GREER, M.D.
HOUSTON, TEXAS

I have selected from my case records of the years of 1922, 1923 and 1924 those of infants whose leading symptom was severe and intractable vomiting, which, on clinical investigation and treatment, was not referable to digestive disorder but to pyloric obstruction. In all, the records of twenty-one infants are considered.

Analysis of the clinical symptoms and the observations on examination, together with the therapeutic results obtained, distinctly separate the entire number of cases into one or the other of two distinct groups.

TABLE 1.—*Age When First Seen*

Pyloric Stenosis		Pylorospasm	
Age	No.	Age	No.
9 days	1	10th day of life	2
13 days	1	2d week of life	1
1 month	5	6th week of life	2
5 weeks	2	3d month of life	1
6 weeks	1	14th week of life	1
7 weeks	1		
8 weeks	1		

The first comprises twelve infants whose disorder proved to be hypertrophic congenital pyloric stenosis, while the second is composed of nine whose clinical examination and response to medicinal and dietary treatment are indicative of the existence of the condition that has been called pylorospasm.

My purpose in this communication is to present concretely the marked contrast in the characteristics of these two conditions, as exhibited by this series of cases, with particular reference to diagnosis and treatment.

* Read before the Section on Diseases of Children at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

ANALYSIS OF THE TWELVE CASES OF PYLORIC STENOSIS

Seven of the twelve, or 58 per cent, came under observation on or before the end of the fourth week of life.

Of the twelve, forceful vomiting was established on or before the third week of life in 83 per cent of the series.

Symptoms.—In every case the onset of vomiting was distinctly acute, and not more than five days elapsed before it was of a definitely explosive character. Transverse epigastric peristaltic waves running from left to right, inclining somewhat upward, were observed in every one. Pyloric tumor was definitely felt in six of the twelve. Much more constant than the last was the evidently painful character of the gastric peristalsis that precedes the forceful expulsion of food. Nine of the twelve showed this to a marked degree, twisting, squirming and crying piteously just before the vomitus was ejected. Constipation was pronounced in eight, artificial means producing only small "hunger" stools. The remaining four passed stools of the same character, from one to two daily. Loss of weight was constantly and rapidly progressive in every case except two, one of which made slight gains for one week on thick cereal feedings, and the other for three days under the same management.

TABLE 2.—*Onset of Forceful Vomiting*

Pyloric Stenosis		Pylorospasm	
Age	No.	Age	No.
3d day of life	1	7th day of life	1
7th day of life	1	9th day of life	1
9th day of life	1	12th day of life	1
2d week of life	2	3d week of life	2
3d week of life	5	5th week of life	2
5th week of life	1	9th week of life	1
6th week of life	1	3d month of life	1

Fluoroscopic examination was performed in five of the twelve cases, though in none was it essential to the diagnosis of the condition present. It is a matter of interest, however, that of those so examined a very high degree of gastric retention was observed; not one exhibiting pyloric passage of as much as 50 per cent of the barium meal (which consisted of 2 drachms [7.5 cc.] of barium subcarbonate in from 1 to 2 ounces [30 to 60 cc.] of human milk) at the end of four hours. In fact, one case in which the onset of vomiting began at the ninth day of life, and was examined under the fluoroscope on the thirteenth day, showed about 90 per cent gastric retention at the end of twenty-four hours.

Four patients received treatment for a period of only two days or less, without any reference to relief from vomiting, but solely to combat dehydration preparatory to operation. Eight received treatment for periods of from three days to two weeks; which, in each one, included atropine administration in physiologic doses, gastric lavage, and thick cereal gruel feeding with limitation of fluids by mouth. In five, dilutions of human milk were given and, in two, cow's milk dilutions with the addition of lactic acid. In all, glucose solutions were given by the various parenteral routes as the conditions of the patients required.

All of the twelve came to surgical operation, which in each revealed occluding hypertrophy of the pyloric musculature. Eight made uneventful recovery, while four died, surviving the operation for from two to five days. Of the latter, one was first seen by us after the condition had existed for four weeks; one for five weeks, one for two weeks, and the fourth for six days. In the case of the last infant, projectile vomiting had appeared on the third day of life and had continued uninterruptedly whenever anything was taken by mouth. All of the four patients who died were moribund when first seen, and surgical intervention was taken as the measure of last resort.

NINE PATIENTS WITH PYLOROSPASM

The second series of nine cases, which for want of a better name are termed pylorospasm, were selected by us for report because the forceful vomiting persisted unchanged on any food that was given in liquid form. They presented clinical symptoms and responded to medicinal and dietary therapy in an entirely different manner than did the patients with congenital hypertrophic pyloric stenosis.

Only 33 per cent came under observation on or before the end of the third week of life.

Fifty-five per cent exhibited forceful vomiting by the end of the third week of life.

These infants presented various degrees of undernourishment, and all were exhibiting forceful vomiting after the ingestion of food, which had been resistant to the many alterations of diet made. They were all subjected to observation during and after taking liquid food from breast or bottle. Five vomited within fifteen minutes, expelling the food distances of from about 6 inches up to 2 feet, and then continuing to emit small amounts at intervals during the following two to four hours. The vomiting of the remaining four was of the same character, but at a later time, and smaller amounts were expelled. Seven exhibited gastric peristaltic waves, which were not as well defined nor as constant as those seen in the instances of congenital hypertrophic pyloric stenosis. In none was a palpable pyloric tumor present, and of the four so examined, the fluoroscope revealed no gastric retention of as much as 50 per cent of the estimated amount of the meal that was not vomited during the four hour period following ingestion.

Constipation, though present to some degree in every case, was variable, and the total amount of fecal material evacuated daily was greatly in excess of that in any of the cases of hypertrophic pyloric stenosis cited.

TABLE 3.—*Number of Days Pyloric Stenosis Patients Were Treated Previous to Operation*

1 day	2 cases
2 days	2 cases
3 days	4 cases
4 days	2 cases
5 days	1 case
2 weeks	1 case

Attempts were made to overcome the vomiting by the administration of many liquid foods, including human milk, dilutions of goat's and cow's milk, powdered and condensed cow's milk, low fat and low sugar mixtures, and the various acid milks. In some, temporary amelioration was obtained; but there was no permanent success in any as long as liquid nourishment alone was used. However, when thick cereal gruels were instituted and liquids given by mouth sparingly, and near the midfeeding interval, there was rapid and permanent cessation of the vomiting, though in some of the cases this regimen was necessary for many weeks.

In six of the nine cases, administration of atropine sulphate before the giving of food appeared to play a great part in limitation of the vomiting.

SUMMARY AND CONCLUSIONS

In my experience, congenital hypertrophic pyloric stenosis presents a well-nigh unmistakable picture: fulminating progression of the vomiting, constancy and clear definition of the epigastric peristaltic waves, and the almost invariable resistance to medical and dietary therapy leaving little room for conjecture. Palpation of pyloric tumor is in no wise essential to the diagnosis, and, conversely, does not establish it. Examination by the roentgen ray has aided us only as a means of corroboration.

I have yet to see an instance of the so-called mild hypertrophic pyloric stenosis. Nor have I obtained a cure of pyloric vomiting by medical and dietary means in any case in which the diagnosis of congenital hypertrophic pyloric stenosis was not open to serious question. In fact, comparison of the first and second series of cases quoted shows them to have little in common except that severe forceful vomiting occurred with constancy in both, and the latter group showed delayed pyloric passage of food to a degree.

My attitude toward the treatment of congenital hypertrophic pyloric stenosis is that surgical intervention should promptly follow the establishment of the diagnosis.

3717 Main Street.

ABSTRACT OF DISCUSSION

DR. H. LESLIE MOORE, Dallas, Texas: This excellent presentation of the classic symptoms makes it easy for all of us to retain a mental picture of this clinical entity. With early diagnosis, prompt and intensive treatment with heavy doses of atropine, gastric lavage, thick cereal feedings, together with refeedings when vomiting occurs, administered by an experienced and persistent nurse, checked by daily visits of an experienced physician, it is safe and proper that these infants should be given a chance to escape an operation. For the last two years I have been following this method, and I believe I have reduced the number of operations by about 15 per cent over former years. This applies mostly to patients that were free from symptoms until after the third week. I have had two patients that vomited from birth. One was operated on at the fourth day, and the other at the fifth day; both were completely relieved and recovered. The hypertrophy occurred early in uterine life, and at birth there was a full grown tumor. Others begin late and are slow in developing. These are the cases that are occasionally amenable to treatment. If one is not experienced in this line of work, if one does not have a skilled nurse, if the patient cannot be seen frequently, if there has been a great loss in weight, by all means one should not delay operation a single day.

DR. H. F. HELMHOLZ, Rochester, Minn.: The two groups that Dr. Greer has pointed out, I would consider definitely the mild and the severe type of pyloric stenosis. It is very difficult to make a differential diagnosis of spasm or stenosis. The absence of peristaltic waves in the first group would make me hesitate about the diagnosis of pyloric obstruction, particularly as it was pointed out that the roentgen ray did not disclose much retention in the stomach. The fact that by means of thick cereal feeding and atropine one can successfully open up a pyloric tumor is important. We have had opportunities to see several postmortem specimens from patients dying years after successful treatment, and have seen the tumor still present with enlargement of the opening sufficient to allow the taking of solid food. On the other hand, the absence of a palpable tumor or absence of peristaltic wave does not mean that a tumor is not present. We have seen a case of this kind in which, in the presence of very marked vomiting, without peristalsis or palpable tumor, at operation a definite tumor was found. The differentiation into the two groups, as he has stated, is possible in a large percentage of the cases, but the line cannot be absolutely drawn. I would call attention to a group of five cases of very mild pyloric stenosis developing in the first ten days of life. These were seen in our obstetric service before the children left the hospital, with definite, large peristaltic waves. Yet in each one of these five cases the patient went on to rapid complete recovery with atropine and occasional cereal feeding. With regard to treatment, I would emphasize the use of a transfusion in preparing the group that is brought in in acute dehydration.

DR. A. ABALLI, Havana, Cuba: We have some cases that can be mistaken for pyloric stenosis. They are the children suffering from inherited syphilis. They commence vomiting from the first day of birth. Sometimes the babies have visible peristaltic movements and lose a great deal of weight. Those cases are classified by Marfan as maladie de vomissements habituals. Perhaps they are connected with meningeal irritation. These babies cry almost constantly (Sixto's sign), and are relieved by treatment of the etiologic condition. The symptoms disappear promptly on antisyphilitic treatment. Other cases of early vomiting belong to the condition known as congenital dilatation of the duodenum and are not pyloric stenosis. In our cases of pyloric stenosis, symptoms commenced after the third or fourth week of age.

DR. F. W. SCHLUTZ, Minneapolis: In the type of case that Dr. Greer described, with very severe vomiting and absence of palpable tumor, and occurring so early in life, I would emphasize the great importance of sufficient administration of water. To overlook this is extremely serious. These cases can be brought to fairly rapid recovery if sufficient regard is had for the administration of water by every conceivable route outside of the oral route. We resort commonly to the intraperitoneal route in these cases. The use of heavy atropine dosage, sometimes cocaine hydrochloride in small doses, is better, and the use of lactic acid milk usually gives good results. We have not resorted as commonly to the thick cereal feeding at that age as Dr. Greer apparently has done, and have had satisfactory results with the lactic acid feeding. I do feel that the greatest and most serious mistake that is commonly made is not having sufficient regard to the necessity of giving water early and frequently enough to these patients. They often recover quite rapidly. Although they appear serious at the time, they do not present the difficult feeding problem that does the true hypertrophic pyloric stenosis case.

DR. A. J. SCOTT, Los Angeles: The point Dr. Greer brought out, and it should be emphasized, is that stenosis occurs before the end of the second month, and spasm cases occur after the second month. At least in the series of cases that we reported about a year ago, we found that this was the approximate dividing line. The roentgenogram shows a definite obstruction in stenosis with no food passing through even at the end of eighteen hours. The spasm patients will have at least two thirds of the food out of the stomach at the end of four hours. Clinically, the two conditions are similar; but there is a marked difference in the true stenosis cases, in which there is marked dehydration, if they have gone too long. In the spasm cases the dehydration is not so marked. The two conditions should be differentiated very carefully, because the stenosis is surgical and the spasm is a medical condition.

DR. JULES M. BRADY, St. Louis: One might gain the impression after listening to Dr. Greer's paper that it was an easy matter to distinguish between a spasm and true hypertrophic pyloric stenosis. As a matter of fact, it is not, and while I have been fortunate in not having the surgeon operate in any cases of spasm, I know of many cases in which erroneously the operation was performed. In my experience, the kind of case that is especially liable to confuse us is one in which there is a parenteral infection. Last winter we had an epidemic of parenteral infection in babies in the first fourteen days of life. It was an infection with very mild fever, one that might be explained by the lack of water. The vomiting was of the projectile type. Some of these cases

were accompanied by diarrhea, and some were not. I endorse the value of the thick cereal feeding method of treating these cases. It is a good way to treat all cases which start out, until we are able to make correct diagnosis. There is one point, however, which I have learned from experience in several years, and that is that while the thick cereal (and the thicker it is the better) will stop the vomiting in many cases, in some babies the progress upward is so slow as to make one doubt the efficiency of treatment. I refer to the gain in weight. Dr. Schlutz' point, to get water into the baby, is excellent. Our method of attempting to get it by retention enemas and rectal enemas has frequently failed. One practical point I have learned is that after a few days of absolutely thick feeding, so thick that the food has to be shoved down with the spatula, and then thinning it out slightly, we are able to induce a gain in weight. Another point of importance is that frequently we get a loose bowel movement. We get diarrhea with thick feeding as first recommended by Dr. Sauer, the use of cream of wheat. I think that cream of wheat feeding is somewhat dangerous. I believe we ought to use a cereal that will not be so liable to undergo fermentation. I refer especially to brown flour.

DR. F. P. GENGENBACH, Denver: I should like to finish the sentence interrupted by the chairman when Dr. Helmholz was speaking by relating our own methods of preparing these cases. We always give them physiologic sodium chloride or Ringer's solution, preferably intraperitoneally. In very debilitated cases we use the blood transfusion which Dr. Helmholz was about to recommend. For all patients that are very anemic and have gone on for some time on lowered food, we always use the transfusion afterward. The point I want to bring out personally in the use of the transfusion is the method of matching the blood with that of the donor rather than depending simply on the typing. We found that there was much less reaction with matched blood than when we depended on typed blood.

DR. L. V. BLANCO, Buenos Aires, Argentina: We have had a few cases of pyloric stenosis in Buenos Aires. I had very good results with treatment. I agree with Dr. Helmholz that it is difficult to differentiate between pyloric hypertrophy and pyloric spasm. We have the waves in both cases. Before one resorts to surgery, one should try the medical treatment. I have had good results with that treatment. I do not agree with Dr. Aballi with regard to old cases of syphilis. I have seen many cases treated with antisyphilitic treatment, and I have treated the same cases with only dietetics and have gotten better results. I agree with Finkelstein that these cases are more of a neuropathic nature.

DR. FRANK C. NEFF, Kansas City, Mo.: I wish to emphasize the point that Dr. Blanco made, and that is the general neuropathic nature of infants with so-called pylorospasm. Dr. Park White described this under the heading of gastro-enterospasm. In trying to separate pyloric spasm from true hypertrophic stenosis, the presence of increased muscle and nervous tone throughout the body is of great help in the diagnosis. The English waste little time in deciding about a surgical operation for pyloric tumor in infants. They believe that the breast feeding should not be interrupted more than one or two days, that the operation should be promptly done, and that the prognosis is much better when the infant can be put back immediately to the breast. I do not know why there is any need, if one has the patient in the hospital, of taking more than from one to three days in deciding what the treatment should be. One will be apt to get benefit from medical treatment in a short time if such is indicated. If not, the child is still an excellent surgical risk. One caution about the intraperitoneal injection for this or any other reason should be mentioned. I have seen two children with a failing circulation—in other words, the child in an extreme condition—in which not only was the fluid injected into the peritoneum absorbed from the cavity but water was extracted from the tissues, so that we had more fluid in the peritoneal cavity an hour later than we had put in.

DR. DAVID GREER, Houston, Texas: We must all realize that in different years, in short periods of time, we each one have different experiences with the same condition, and I appreciate the benefit of theirs. Their observation, of course, adds a great deal to the small experience and small series of cases I have reported. Be that as it may, I would still emphasize that my attitude would be that, Given a child with projectile vomiting, severe pain and epigastric peristalsis, with or without palpable tumor, if it did not quickly show improvement on the so-called medical treatment, preferably the thick cereals, fluids and atropine, operation should not be delayed. The only point I would take any exception to at all is the giving of fluids intraperitoneally during the course of one's trial of medical treatment in a case that might be pyloric stenosis. I would hardly think it advisable to inject anything into the peritoneal cavity when operation would possibly have to be resorted to.

Clinical Notes, Suggestions and New Instruments

SPIRAL URETHRAL DILATOR

OSCAR HAYES, M.D., AKRON, OHIO

These spiral urethral dilators are made of steel that takes the finest polish and they are heavily nickel-plated and polished. They are made in sizes 16-24, 18-28, 20-32, 22-36, 24-40, 26-44, 28-44 and 30-46, and are 9¾ inches long.

They are numbered so that the first numeral represents the approximate metallic circumference, the French scale being used for numbering sounds. The last numeral represents the approximate diameter of the outside spiral circumference. The 20-32 size has the actual metal as in a number 20 F standard sound, and the outside diameter of the spiral is about the size of a number 32 F sound.

Spiral urethral dilators were designed for the purpose of milking and massaging infected follicles and lacunae of the urethra. The surprising ease of introduction into the urethra when strictures were present stimulated me to make several sizes to be used in dilating and massaging strictures.

Spiral urethral dilator.

ADVANTAGES OF SPIRAL URETHRAL DILATORS

1. They are easier to introduce and without the irritation due to the dragging friction of ordinary sounds.

2. They will actually empty infected follicles of their contents, as the pressure is distributed so that the follicular opening is unobstructed.

3. Strictures and granular patches are massaged by their action rather than being torn by the sudden dilation which frequently happens when ordinary sounds are used.

4. The posterior surface of a stricture where the most hyperemia is usually found can be massaged as well as the anterior surfaces.

5. Greater dilatation can be obtained through a small meatus.

6. The spirals of the dilators adapt themselves to the walls of the urethra as well as to the strictured bands.

7. There is little or no danger of pushing infection or pus farther into the urethra, as the spirals tend to bring such substances outward.

SUGGESTIONS IN THE APPLICATION OF SPIRAL URETHRAL DILATORS

Proper lubrication is important in introducing any instrument into the urethra. The canal should be properly lubricated as well as the instrument.

The size of instrument should be selected that will appear to fit the organ.

With the patient lying on his back and the organ held perpendicular, the dilator is introduced into the meatus, and by gentle rotary motion the dilator is started into the urethra. If the instrument meets resistance it is too large and a smaller one should be selected.

The instrument, if not too large, will worm its way without force down to the curve of the urethra. Then the handle is

grasped and the dilator drawn outward without being allowed to rotate. Should there be too much resistance, the instrument is still too large.

The better results are obtained by a massaging action rather than tearing. When the spiral dilators are carefully operated there is practically no irritation.

MULTILOCULAR TUBO-OVARIAN CYSTS IN JUVENILES

WILLIAM LEE SECOR, M.D.,
KERRVILLE-ON-THE-GUADALUPE, TEXAS

Large ovarian cysts are not of common occurrence in young girls. Up to 1905, only sixty-one ovarian cysts in children had been reported. Since that date thirty-eight more have been recorded.

Most of these were not very large, but a few were enormous. The most remarkable one was that reported by Keen[1] in 1893. It occurred in a girl, aged 15 years, from whom he removed a cystic ovarian tumor weighing 111 pounds (50 Kg.), and the fluid removed weighed 84 pounds (38 Kg.). The child weighed only 68 pounds (31 Kg.). Keen remarks that after the removal of the tumor the abdominal cavity looked almost like that of an eviscerated cadaver in the dissecting room. The child made a good recovery.

In 1921, Findley[2] reported a case of ovarian cyst in a girl, aged 15 years. The cyst was of the right ovary, was thin walled and multilocular, and weighed 32 pounds (14.5 Kg.). There was no twist of the pedicle and no evidence of a malignant condition. Six liters of bloody fluid was withdrawn from the tapped abdomen forty-eight hours before operation was performed.

In 1895, Walter[3] reported a case of a multilocular ovarian cyst in a girl, aged 13 years, the entire weight of the cyst, fluid and cyst itself being 13 pounds and 10 ounces (6 Kg.).

Reuben[4] has recently reported a case of a girl, aged 7½ years, from whom an ovarian cyst, the size of a grapefruit, was removed successfully. Another case reported by Reuben was that of a girl, aged 14 years, from whom a large cyst of the right ovary was removed. The pedicle was twisted twice.

Cystomas increase in frequency as age advances. Cyst of the ovary has been reported in a 7 months old fetus, one in a baby 15 weeks old and another in a child 3 months of age.

After searching the literature, however, it seemed evident that large multilocular cysts in young girls were sufficiently rare to justify the report of a case that recently came to operation at my hand. In fact, this tumor, which weighed 28 pounds and 6 ounces (about 13 Kg.), seems to be one of the very largest yet reported occurring in young girls.

REPORT OF CASE

S. M. was first seen by Dr. Isaac Mayhugh of Kerrville, Texas, June 1, 1926, and a diagnosis of large cystic tumor made. Dr. Mayhugh immediately referred the patient to me for surgical treatment.

The patient, admitted to the Kerrville Hospital under the Charles Schreiner Endowment, June 2, gave the age of 15. She was a slender, anemic, white girl complaining of no symptoms aside from abdominal pressure. There was little dyspnea.

The laboratory examinaton of the urine and blood were negative except for hemoglobin of 65 per cent. The stools were clay colored, and the patient's skin had a dull, pasty appearance. Physical examination disclosed no abnormality aside from an enormous abdomen with very tense walls and, on percussion, flatness throughout.

The girl gave the history of having first menstruated at 12½ years. The periods, at first regular, had been coming every two weeks for nearly a year. She had noted an enlargement of the abdomen for about one year. Eight months prior to her admission to the hospital the abdomen became very large but suddenly subsided so that she attended school, took a leading part in basketball games, and complained of no symptoms aside from increasing abdominal fulness.

June 3, I operated. A typical multilocular tubo-ovarian cyst of the left side was removed. The tumor seemed to fill the abdomen and pelvis. The intestine and liver were pressed so very tightly against the diaphragm that to the examining hand there appeared to be one solid smooth dome-shaped surface which felt very much like the under surface of the diaphragm. Individual loops of intestine and separate organs were not manifest. The pressure on the gallbladder and bile ducts was so great as to cause partial obstruction to the flow of bile, resulting in clay colored stools. After removal, the abdominal cavity looked like an eviscerated cadaver, as Dr. Keen noted in his remarkable case. Adhesions marked the site of the leakage some months before.

Gross examination of the tumor by Dr. Mayhugh and Louise Ross Lunn, R.N., showed a large, thick walled cyst composed of thirty-one separate and distinct locules, some filled with a heavy, clear, gelatinous fluid, some filled with thin, clear fluid, some with heavy, yellow, gelatinous fluid, others with a dark brown, thick but not gelatinous fluid, and one with thin, bright blood stained fluid.

The whole mass weighed 28 pounds and 6 ounces (about 13 Kg.). The solid portion weighed 10 pounds and 10 ounces (4.7 Kg.), and there were 9 quarts (8,600 cc.) of fluid.

The patient had a perfectly smooth convalescence and was discharged from the hospital at the end of three weeks.

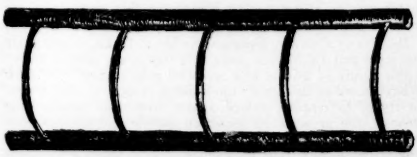
Dr. Mayhugh has been carrying out a line of endocrine therapy with her and reports that the patient is steadily gaining in weight and making a perfect recovery.

1. Keen, W. W.: An Ovarian Tumor Weighing One Hundred and Eleven Pounds Removed from a Child of Fifteen Whose Weight was 68 Pounds, Cell. & Clin. Record. **14**: 142, 1893; M. Review **28**: 3, 1893.
2. Findley, Palmer: Partial Rupture of an Ovarian Cyst Weighing Thirty-Two Pounds, with Great Loss of Blood in a Girl 15 Years of Age, J. Obst. & Gynec. Brit. Emp. **28**: 151, 1921.
3. Walter, W.: A Case of Leakage of a Multilocular Ovarian Cyst in a Girl Aged Thirteen, Brit. Gynec. J. **11**: 51, 1895-1896.
4. Reuben, M. S.: Torsion of Ovarian Cysts in Children, Arch. Pediat. **43**: 54 (Jan.) 1926.

A NEW INSTRUMENT FOR CLOSING ABDOMINAL WOUNDS

A. H. ROSBURG, M.D., SAN FRANCISCO

This device is made of two brass rods and two or more (depending on the length of the ladder) cross wires or steps of the ladder. The entire device is nickeled. The rods, or uprights, of the ladder are from 2 to 12 inches long and three-eighths inch in diameter. The steps, or cross bars, are 2½ inches long, and slightly curved. The device does away



Instrument for closing abdominal wounds.

with the heavy chromic catgut sutures usually placed in the anterior sheath of the rectus, and incidently with a lot of postoperative wound infections; it absolutely prevents cutting of the skin by the tension sutures; it compresses the tissues of the abdominal wall and thus does away with dead space.

The device is placed on the part to be incised, and with the back of the blade of the scalpel two parallel marks are made on the skin just lateral to the uprights of the ladder. It is then put aside and many marks are made on the skin across and at right angles to the two parallel markings. These should be about one-fourth inch apart.

The incision is then made midway between the two parallel markings.

After the peritoneum has been closed in the usual way, figure-of-eight tension sutures of silkworm, heavy dermal or linen are placed in the skin subcutaneous fat and anterior sheath of the rectus at the crossings of the skin markings made at the beginning of the operation. The skin is then

sutured, the ladder replaced, and the tension sutures, which should be one-fourth inch apart or even closer, are tied not loosely but very tightly around the upright of the ladder. The usual dressings are used. The tension sutures with the ladder are removed two weeks after the operation.

I have used this method of closing abdominal wounds and have found it superior to the old methods. It does away with the heavy buried chromic catgut sutures for the anterior sheath of the rectus, which in my hands often caused late wound infections. It also gives one a chance to tie the tension sutures tight so that they really are of some use and yet not cut into the skin. This method is comfortable for the patient, as the sutures cannot cause pain by cutting into the skin.

REAPPEARANCE OF A POSITIVE DICK TEST *

JOHN A. TOOMEY, M.D., CLEVELAND

Ferry[1] recently called attention to the reappearance of a positive Dick test in a patient who contracted measles.

About eighteen months ago, fifty-five nurses were divided into two groups, one of twenty, actively immunized against scarlet fever, and the remaining thirty-five, not protected, serving as a control series. All of the latter have subsequently developed scarlet fever, while nineteen of the twenty protected nurses have continued negative although frequently exposed to the disease. Fifteen of the nurses who developed scarlet fever developed redness at the site of the old Dick test. The longest interval between the reappearance of the redness with scarlet fever and the primary Dick test was one year, in two instances. All other nurses who had local redness had their scarlet fever within from two to three weeks after their test. In two instances, the redness occurred around the Dick test before the rash appeared, and in all cases this redness remained as long as the rash. In no instance did we see any blanching as described by Zingher.[2]

One of our patients had a positive Dick test and had a cross-infection of measles. As in Ferry's case, this patient developed redness at the site of the old Dick test. In another instance, a tuberculin test done four weeks previous became reddened again when the patient contracted measles.

It is possible that in these instances we are dealing with a modified Arthus phenomenon.

GANGRENE OF THE ARM AND DEATH FOLLOWING HYPODERMIC INJECTION

MARKS M. SHAINE, M.D., NEW YORK

As the result of the high pressure salesmanship methods of some pharmaceutic houses, the use of hypodermic and intravenous medication is growing by leaps and bounds. Some physicians have almost discarded prescription blanks, and their offices are veritable stock rooms filled with hundreds of ampules of various kinds.

That there is real danger in needle administration of drugs is proved by the cases of Tennant and of Doane mentioned by Fantus.[3] The case here to be described, which concerned a relative, is similar and warrants the warning not only to use the same strict asepsis in administering a hypodermic injection that one would use in a major operation, but also not to use hypodermic or intravenous medication except with those drugs which have little or no effect when administered by mouth.

M. L., a woman, aged 32, married, complained of weakness and lassitude. Her physician found a moderate anemia and advised a series of hypodermic injections of a preparation of arsenic. Twelve injections were given with apparently good effect. After a time the symptoms returned and a new course of injections was started. Thirty-six hours after the first injection in the second series, the patient complained of pain at the site of the injection in the left deltoid region, and noted a small area of redness. The redness and pain increased, and the temperature was between 101 and 104 F. A consultation was held at which a prominent dermatologist and a surgeon were present and a diagnosis of erysipelas was made. The redness continued to spread until it reached almost to the wrist. The fever continued high and the patient looked quite ill.

On the seventh and eighth days, large incisions were made in the arm and forearm; no pus pockets were found, but the tissue was necrotic and seropus oozed from the incision. On the ninth day the arm became gangrenous; high amputation was performed after a transfusion had been given. The patient died about two hours after the operation.

CONCLUSION

A hypodermic injection is a surgical procedure. Drugs should always be administered by the oral route except in those few cases in which the hypodermic method has been proved to give much better results. There is no proof that the arsenicals act better when given hypodermically than when given by mouth.

210 West Seventieth Street.

AN ANCIENT BLADDER STONE

G. D. WILLIAMS, M.D., CAMBRIDGE, MASS.

In the course of routine examination of an 18-year-old male mummy from one of the Basket Maker caves of northeastern Arizona, Mr. S. J. Guernsey of Peabody Museum, Harvard University, found among the articles associated with the burial an ovoid stone the size of a lime. Examination of the stone showed no perforation or other means for attaching it to the body or clothing as in case of an amulet or ornament.

Vesical calculus from mummy.

The stone is symmetrically oval and measures: length, 42 mm.; breadth, 34 mm.; thickness, 27 mm. The weight is approximately 1 ounce troy, or 32 Gm. It has a somewhat chalky look and, like chalk, it leaves its white mark when rubbed on a hard surface. The surface is not smooth but has a shallow reticular pitting of a brownish hue which shows through the chalky white. The stone is soft and easily drilled.

The field notes of the excavator, Mr. Guernsey, state that the stone was found "in the pelvis of the mummy." Mr. Guernsey and I suspected that the stone might be a vesical calculus, and submitted drillings of it to Dr. H. W. Starkweather, a chemist of Harvard University, who reports as follows: Spectroscopic examination showed the presence of calcium. Dilute acetic acid gave a slight evolution of gas, indicating the presence of some carbonate. An acid solution gave a slight white precipitate with magnesium and ammonium chloride, indicating the presence of a phosphate. More than half of the material did not dissolve in dilute acetic acid. A small amount of the residue, heated on platinum, burned without flame, showing the presence of organic matter. Another portion subjected to the murexide test was positive for uric acid.

The interest in this bladder stone lies in the antiquity of the stratum to which it belongs. According to Mr. Guernsey, the Basket Makers, so called from the fact that finely woven baskets are invariable mortuary offerings, are the most ancient human group in the Southwest of which we have knowledge. They antedate the Cliff Dwellers. How long ago they lived we cannot at this time be sure, but it is safe to say that the mummy in question is at least three thousand years old.

Peabody Museum.

* From the Division of Contagious Diseases, Cleveland City Hospital, and the Department of Pediatrics, Western Reserve University School of Medicine.

1. Ferry, N. S.: Reappearance of Reaction at Site of Previous Dick Test Coincident with Appearance of Measles Rash in a Case of Measles, J. A. M. A. **87**: 241 (July 24) 1926.

2. Zingher, Abraham: The Dick Test in Normal Persons and in Acute and Convalescent Cases of Scarlet Fever, J. A. M. A. **83**: 432 (Aug. 9) 1924.

3. Fantus, Bernard: The Technic of Medication, J. A. M. A. **87**: 170 (July 17) 1926.

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SATURDAY, SEPTEMBER 18, 1926

THE CLINICAL PHYSIOLOGY OF THE STOMACH

The constancy of various physiologic activities and the chemical uniformity of some of the body fluids under certain well defined conditions have been of considerable value to the practice of medicine. Thus the rate of the heart beat, when properly controlled, may become an index of normal function; variations in the composition of the blood from a certain fixity that is characteristic of health may betray the presence of pathologic conditions. The heat regulation of the organism ordinarily prevents more than small deviations of the body temperature from a well established "normal." The progress of clinical biochemistry has made it possible to measure the gastric functions by quantitative methods, and has awakened enthusiastic hopes of the value that the data secured will contribute to the diagnosis of alimentary abnormalities.

There are recurring indications that some of the earlier assumptions regarding the gastric juice may have been unduly rigorous. There was a time, not long since, when students of gastric physiology were taught that the acidity and volume of the secretion provoked by a "test meal" of a definite sort are fairly constant in character, and that the motor responses of the stomach to a digestive task of selected character are rather uniform. The accumulating wealth of measurements of these factors in persons presumably healthy or normal in function has not furnished the precise concordance of results that was anticipated. This is well illustrated by observations of Bloomfield and Keefer [1] at the Johns Hopkins Hospital. Using a standard gastric stimulus or "meal" in the form of 50 cc. of 7 per cent alcohol solution, they have noted wide variations in acidity as well as volume of the secretion provoked. The quantity of gastric juice secreted by persons without digestive symptoms varied between 9 and 69 cc. for a ten minute period, the closer range being from 10 to 30 cc. No relation was found between the volume of juice secreted and its acidity. The data are not as haphazard as might seem to be the case from this generalization; for although the volume of secretion and the degree of acidity vary within considerable limits in different persons, under the conditions of a constant test they are practically constant in the same person on repeated examinations. Motility, on the other hand, seems to vary greatly, and it bears no obvious relation to the other factors.

Gastro-enterologists have long recognized the existence of what are popularly designated by them as, respectively, rapidly emptying and slowly emptying stomachs in healthy persons. In view of such divergences, the Baltimore clinicians raise the question whether the terms hypernormal, normal, hyponormal and hyperacidity should be continued in use when they have clinical implications that do not appear altogether warranted. Perhaps the advice to speak simply of low, average or relatively high acidities is more in harmony with accumulating experience. At any rate, the gastric response of man should no longer be expected to manifest the extreme uniformity shown by some other bodily functions.

1. Bloomfield, A. L., and Keefer, C. S.: Clinical Physiology of the Stomach: Simultaneous Quantitative Observations on Gastric Secretory Volume, Acidity and Mobility, Arch. Int. Med. **38**: 145 (Aug.) 1926.

THE BLOOD IN THE LUNGS

The requirements of different parts of the body with respect to their oxygen supply, on the one hand, and the removal of metabolic débris, on the other, varies greatly from time to time. As the satisfaction of these needs depends primarily on the circulation, it is evident that excellent facilities for adjustment of the blood flow to them must be available. A recent writer [1] has indicated specifically what this may mean when a healthy person passes from a condition of bodily rest into heavy muscular activity. The delivery of blood by the left ventricle is augmented enormously, an increase of from 5 to 25 liters a minute being an ordinary result. He reminds us that a balance of blood vessel constrictions and dilatations accompanies this enhancement in output, shunting blood toward the working muscles. As Krogh and others have shown, the capillary bed in such contractile parts expands in area by the opening of closed vessels. Muscular work is thus accompanied by an enlargement of the surface for the diffusion of oxygen from the blood.

Evidently the lungs must keep pace with these changes, for during exercise the increased blood flow inevitably is also being pumped through the pulmonary circuit. The vascular changes, particularly in the lung capillaries, that permit a suitable adaptation to such large increments in the circulation within them, have not been clearly demonstrated. The requisite adjustment may conceivably be secured by active changes, as in the muscles, or by purely passive regulation. A recent investigation [1] at the Harvard University School of Public Health has failed to show any active varia-

1. Drinker, C. K.; Churchill, E. D., and Ferry, R. M.: The Volume of Blood in the Heart and Lungs, Am. J. Physiol. **77**: 590 (Aug.) 1926.

tions of pronounced character in the caliber of the small pulmonary vessels under the influence of either shortage of oxygen or accumulation of carbon dioxide in the blood. It also seems improbable, in the opinion of these experimenters, that nervous regulation alters the size of the capillary pulmonary bed to meet the condition of the moment.

According to the Harvard researches, increase in inflow into the right ventricle is the only means falling within ordinary normal experiences that results in increase of the pulmonary blood volume. Surplus routes of distribution are at hand. When the blood flow through the lungs is rapid and the pulmonary blood volume increases, all available channels are conducting blood and are somewhat distended. When flow falls and the pressure playing on different capillary paths is low, then only the easiest routes transmit the effective blood current, blood moves sluggishly through the more difficult, and the total pulmonary volume decreases. This is the picture of a truly passive regulation.

PHOSPHATEMIA

The modern applications of analytic chemistry to the study of the blood, whereby it has become possible to secure comparatively elaborate data from a small sample, already seem destined to rival the diagnostic advantages that have long accrued from microscopic investigations of the blood. The chemical components that remain in solution are beginning to tell their story to the competent examiner, just as the various types of formed elements have long been doing. Erythrocytes, leukocytes and bacteria no longer are the only features of immediate interest in the clinical study of the blood. Sugar and the various types of nitrogenous catabolites, such as urea, creatinine and uric acid, can be measured quantitatively with comparative ease. Each item thus established has some direct significance to him who is attempting to read the story of the body's physiologic deportment; and of late calcium, phosphorus and chlorine have become determinable with comparative facility for the same purpose.

Now that the biochemist has made his contribution, it becomes the duty of the clinician to avail himself of the knowledge and to attempt to apply it to his especial needs. Striking instances of the possibilities involved are afforded by the work of the late John Howland. As one of his biographers [1] pointed out, in infantile tetany Howland and Marriott showed that the calcium of the blood is diminished; and they made the treatment with calcium chloride a routine procedure. Howland's great contribution to the understanding of rickets, in which Kramer also participated, was the discovery that the disease is characterized by a diminution of the inorganic phosphorus of the blood. Previous investigators had thought of the malady as dependent on an abnormal metabolism of calcium. After Greenwald, in 1915, demonstrated an increase in the acid-soluble phosphorus of the blood of patients with nephritis, Marriott and Howland concluded that phosphate retention is the cause of nephritic acidosis.

The evidence is increasing to indicate that the content of phosphates in the blood gives valuable aid in making the prognosis in nephritis. A group of investigators [2] at the University of Toronto have also found the blood phosphates increased in at least two thirds of the nephritic children examined. They noted that the calcium and phosphates in the blood of nephritis bear an approximately reciprocal relationship to each other. High blood phosphates were usually found in patients with acidosis, but were also noted in children with no acidotic symptoms. A persistent moderate increase, particularly when transitory rises due to acidosis are excluded, indicates the presence of a progressive renal lesion. If the content of phosphorus reaches 7 mg. per hundred cubic centimeters, severe permanent harm is indicated; while values of 10 mg. are found when death impends. Phosphatemia thus becomes evidence of the functional impairment of the kidneys to excrete phosphates quite as well as merely a disturbed acid-base balance in the body. Retention is not necessarily accompanied by acidosis.

The Toronto investigations also seem to indicate that the nephritic kidney is functionally incapable of excreting calcium in a normal manner. This was evidenced by the low total excretion of calcium, and more strikingly by its decreased concentration in the urine. The calcium balance is apparently independent of the content of this element in the blood.

THE EMPTYING OF THE GALLBLADDER

As a result in particular of the pathologic manifestations for which it may become responsible in various ways, the gallbladder obtrudes itself frequently on the attention of the clinician. The function of this organ has remained obscure too long. The uncertainty has been accentuated by the striking circumstance that the gallbladder is always missing in certain species of the higher animals, whereas it is conspicuous as a part of the biliary tract of man. Consideration of its functions has involved questions of the storage of bile and also of the propulsion of the hepatic secretion toward the intestine. During recent years the marked concentration that the bile may undergo through sojourn in the gallbladder has become a demonstrated fact; and the knowledge of this reaction has helped to elucidate various features of pathogenic import.[3] The development of cholecystography, notably by Graham and his associates [4] in St. Louis, has greatly

1. John Howland—1873-1926: Science **64**: 80 (July 23) 1926.

2. Boyd, G. I.; Courtney, A. M., and MacLachlan, I. F.: The Metabolism of Salts in Nephritis, I, Calcium and Phosphorus, Am. J. Dis. Child. **32**: 29 (July) 1926.

3. Functional Versus Mechanical Suppression of Bile, Current Comment, J. A. M. A. **85**: 614 (Aug. 22) 1925; The Coloration of Subdural Blood Clots, ibid. **85**: 1402 (Oct. 31) 1925.

4. Graham, E. A.; Cole, W. H., and Copher, G. H.: Cholecystography, J. A. M. A. **84**: 1175 (April 18) 1925.

facilitated the insight into abnormalities of the gallbladder; but as a recent writer has remarked, despite the fact that the cholecystographic shadows that permit the roentgenologic visualization of the organ may persist for hours, depending on conditions, no one has reported observations of anything resembling a peristaltic action. If the gallbladder really is a contractile organ like the stomach, one would expect at times to secure evidence of motility by a method comparable with that which has contributed so much to an understanding of the contractile functions of the alimentary tract.

The emptying of the gallbladder is not necessarily dependent on muscular forces. Like other hollow viscera of the body, it is elastic. A recent study by Kodama [5] in the department of surgery of the Washington University Medical School, St. Louis, indicates that the mechanical principle of elastic contraction is an important factor in the emptying of the gallbladder. It can easily be distended and it has an appreciable elastic recoil when the inside pressure is suddenly relieved. Kodama points out that, when the sphincter of Oddi at the ampullar end of the common bile duct is closed, the gallbladder is being constantly distended by the reception of bile. When, however, the intestinal end of the duct is suddenly opened, there is a sudden diminution of pressure within the gallbladder. Elastic recoil then occurs and bile is squirted through the cystic duct with considerable force. The discharge of bile from the gallbladder will continue until the pressures within the gallbladder and within the common duct have come to an equilibrium. Obviously, therefore, Kodama concludes, the gallbladder never empties itself completely at one time as it would if a peristaltic contraction occurred. Its contents, however, will gradually undergo dilution and change if a succession of openings and closings of the intestinal end of the duct occurs, because, after every closure of the sphincter, more liver bile will pour into the partially emptied gallbladder, which will again discharge some of its contents as soon as the sphincter reopens. In this way the gallbladder will be gradually washed out by the repeated opening and closing of the end of the common duct.

There are experimental evidences of the tenability of this view of discharge from the gallbladder as an elastic recoil from overdistention. If it is indeed correct, Kodama points out that a single application of a substance to the duodenum cannot be expected to empty the gallbladder, regardless of whether the material used is magnesium sulphate, as suggested by Lyon, or a more powerful stimulant to the flow of bile, such as fat has been reported to be.[6] In any event, some doubt is cast on the possibility of efficient drainage of the gallbladder by the Meltzer-Lyon method.

5. Kodama, S.: A Model to Simulate the Mechanism of Emptying of the Gallbladder, Am. J. Physiol. **77**: 385 (July) 1926.
6. Whitaker, L. R., and Milliken, G.: Surg. Gynec. Obst. **40**: 17 (Jan.), 646 (May) 1925.

Current Comment

UNIVERSAL BAN ON HEROIN

The Interparliamentary Union will be called on at its meeting in 1927 to determine whether a universal ban shall or shall not be placed on diacetylmorphine (heroin), if a resolution that was adopted at the conference recently held in Geneva is effective. The conference, which assembled to arrange for the meeting of the union next year, adopted a resolution recommending for the consideration of the groups of the union the enactment of effective laws or regulations prohibiting the manufacture and distribution of heroin and requesting the Interparliamentary Bureau to transmit the resolution to the groups of the union and all the governments and parliaments of the world. The resolution was adopted on the initiative of Stephen G. Porter, chairman of the Committee on Foreign Affairs of the United States House of Representatives, one of the United States delegates to the conference. In support of it, Mr. Porter cited the action of the House of Delegates of the American Medical Association, in 1920, recommending that heroin be eliminated from all medicinal preparations and that its manufacture and sale in the United States be prohibited. He called attention, too, to the discontinuance of the use of the drug by the medical services of the United States Army, Navy and Veterans' Bureau, and by the Public Health Service. His investigations have convinced him that at least one third, perhaps one half, of the crimes of violence committed in the large cities of the United States by the so-called gunmen and others are committed by heroin addicts. The small dose and bulk of heroin facilitate smuggling and secret addiction. Importation of opium into the United States for manufacture into heroin has already been prohibited by law, and by a regulation of the Federal Narcotics Control Board, opium may not be imported to replace any derivative of opium that has been converted into heroin.

THE REACTION OF THE MECONIUM

The introduction of accurate methods of determining the true acidity, that is, the hydrogen ion concentration, of body fluids and tissues has made it possible to approach some of the biochemical problems of the organism in a more effective manner than was formerly feasible. As a consequence, our conception of the sequence of reactions in different parts of the alimentary tract under varying conditions has gradually been revised. The acid or alkaline reactions betrayed by such indicators as litmus have been found often to represent the actual acidity in a somewhat misleading way from the standpoint of current standards. The reaction of the feces varies considerably in response to different types of diets. This is notably true in infancy, when the hydrogen ion concentration may range from p_H 4.6, an acid response, to p_H 8.3, on the alkaline side. Such differences are accompanied by variations in the predominant type of micro-organisms in the intestinal flora. They also represent the usual

divergences associated with unlike dietary conditions. Breast milk produces a characteristic acid reaction of the infant stools in contrast with the neutral or even alkaline reaction observed after a regimen in which cow's milk predominates. The question has consequently arisen as to whether the reaction determines the flora or vice versa. The meconium represents a condition of the alimentary tract when bacteria are excluded. The first measurements of its reaction, recently reported from the Yale University School of Medicine by Norton and Shohl,[1] indicate an average acidity of p_H 6.1. As the new-born infant begins to digest food, the acidity of the stools increases gradually during the first week to the reaction characteristic of breast-fed infants, or about p_H 4.9. According to these pediatricians, the meconium is closely analogous, both in chemical composition and in reaction, to the stools found in starvation. Therefore it seems highly probable to them that the initial reaction of the meconium and its gradual orderly change to that of breast-fed infants' stools are due primarily to the state of partial starvation at birth. As soon as the intake becomes adequate, the nutritional change is reflected in the fecal reaction.

THE MUSCULATURE AND MOVEMENTS OF THE ESOPHAGUS

The esophagus is a motile organ that affords unique interest in several respects. The upper portion is composed of striated muscle, in contrast to the smooth or unstriated variety that enters into the distal portion as it does throughout the rest of the alimentary tube. The different types of contractile tissue are presumably served by unlike modes of innervation. In view of these varied features it is to be expected that the upper and lower reaches of the gullet may exhibit somewhat differing pathologic manifestations, particularly so far as motility is concerned. It is a familiar physiologic observation that organs dependent on an extrinsic nerve supply cease their characteristic activity when the nerves are excluded. Muscles, whether striated or smooth, possess independent irritability and contractility. In the absence of stimuli through extrinsic nerves, however, only the smooth muscles seem to exhibit what may be termed automatic function. A recent writer has pointed out that this automatism may be so dominated by extrinsic nerves that it does not express itself; it remains subdued, as it were. When, however, the influence of the extrinsic nerves is removed, the automatism can exercise its powers. This has recently been demonstrated well in the case of the esophagus by investigations of Jurica[2] at the University of Chicago. Paralysis involving the entire esophagus follows immediately on double vagotomy; not on double splanchnectomy. Evidently, as Jurica points out, the vagi are of more importance than the splanchnics in the control of this organ. Presently the part composed of smooth musculature, with the local plexus of Auerbach, begins to act by itself after denervation. As in the case of the rest of the gastro-enteric tract, distention of the lower esophageal tube is an adequate stimulus to provoke coordinated contraction. The outcome of a denervated condition is interesting. Food swallowed into a vagotomized esophagus lodges in the upper part, forming an elongated column. By subsequent swallows this moves downward until it is forced into the beginning of what corresponds to the smooth musculature, whereupon peristaltic propulsion begins. It is an instance of the always striking correlation between structure, innervation, and function in the organism. One can thus better appreciate the possibility of unlike responses to pathologic processes in different parts of the esophageal tract.

1. Norton, R. C., and Shohl, A. T.: The Hydrogen Ion Concentration of the Stools of New-Born Infants, Am. J. Dis. Child. **32**: 183 (Aug.) 1926.

2. Jurica, E. J.: Studies on the Motility of the Denervated Mammalian Esophagus, Am. J. Physiol. **77**: 371 (July) 1926.

Association News

THE WASHINGTON SESSION

Papers for the Section on Obstetrics, Gynecology and Abdominal Surgery

Dr. Carl Henry Davis, Goldsmith Building, Milwaukee, secretary of the Section on Obstetrics, Gynecology and Abdominal Surgery, requests that physicians who wish to appear on the program of that section at the session of the American Medical Association in Washington, D. C., May 16-20, 1927, submit titles to his office by November 1. The early date of the session necessitates an early completion of the program.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALASKA

No Smallpox in Alaska.—The U. S. Department of the Interior has just completed the distribution of smallpox vaccine and diphtheria toxin throughout the territory of Alaska. The territorial government and the bureau of education have cooperated in placing vaccine points in all towns in Alaska inhabited by white people for use in case of an epidemic; other steps also have been taken to prevent smallpox, which has been prevalent in Pacific Coast states extending to Alaska. There has been no smallpox in Alaska this summer.

COLORADO

State Medical Meeting.—The fifty-sixth annual meeting of the Colorado State Medical Society will be held at Colorado Springs, September 21-23, under the presidency of Dr. George A. Boyd. The house of delegates will meet Monday evening, September 20, at the city auditorium, where all the scientific meetings will be held also. A periodic health examination clinic will be held each morning and afternoon, and fresh pathologic specimens will be demonstrated by the state medical school and by officers from the U. S. Army General Hospital. The president's reception will be Tuesday, 9 p. m., at the Antlers Hotel, following a public meeting at the First Methodist Church, which will be addressed by Dr. Morris Fishbein, Chicago, editor of THE JOURNAL. Among the speakers at the scientific sessions will be Dr. Dean Lewis, Johns Hopkins University Medical School, Baltimore, "Bone Lesions—Their Diagnosis and Treatment"; Dr. Charles W. M. Poynter, Omaha, "The Lymphatic System as a Defense Mechanism"; Dr. Benjamin K. Hays, Fort Lyon, "Diagnostic Problems Peculiar to Veterans' Bureau Hospitals"; Dr. Franklin G. Ebaugh, Denver, "Treatment of General Paresis by Inoculation with Tertian Malaria"; Rev. Joseph F. Higgins, of the Colorado Hospital Association, "Why Advertise Charity?"; Dr. Harry Gauss, Denver, "Obesity—

Causes, Complications, Treatment," and Dr. Frederic A. Forney, Woodmen, "Treatment of Tuberculosis with Artificial Light."

CONNECTICUT

Five Die of Septic Sore Throat.—The outbreak of septic sore throat at Guilford, noted in THE JOURNAL, August 21, amounted to a total of 188 cases, 169 of which had, on August 15, been investigated by the state department of health; there had been five deaths at that time. Guilford was supplied with milk from four dairies and none of it was pasteurized. The outbreak of sore throat was attributed to milk from one of these dairies.

Personal.—Dr. Edward L. Kingman has been appointed health officer of Newtown.——Dr. Winthrop D. Scudder has been appointed health officer of East Hartford and South Windsor, to succeed the late Dr. Franklin H. Mayberry.——Dr. Howard W. Haggard, assistant professor of applied physiology at Yale University, has been appointed on the editorial board of the *Journal of Personnel Research*, succeeding Dr. Alice Hamilton of the Harvard Medical School, resigned.

Diphtheria Trends Downward.—In the first six months of 1926, there were fewer diphtheria cases in the state of Connecticut than in a corresponding period of any recent year. There were 1,135 cases of diphtheria reported to the state department of health in the first six months of 1915, 1,695 cases in 1920, and 1,674 in 1921, since which time there has been a gradual reduction in the number of cases, the most notable reduction being this year, when the number of cases was 760. Since 1920, there has been an increasing number of children immunized by means of toxin-antitoxin in the state. The state department of health states that the conclusion seems justified that the constant decline in diphtheria cases in Connecticut during the last few years is due in considerable measure to immunization with toxin-antitoxin.

FLORIDA

Former Eclectic Medical Examiner Arrested.—Dr. George A. Munch, Tampa, one time secretary of the Florida Eclectic Board of Examiners, was arrested by postoffice inspectors, September 4, it is reported, on charges of using the mails to defraud in the alleged sale of fraudulent medical diplomas. Dr. Munch is said to have "sold" diplomas presumably from defunct institutions and to have granted licenses to practice in Florida and elsewhere to persons not properly qualified, for fees ranging from $200 to $2,000. Dr. Munch, according to the *Federation Bulletin*, January, 1924, refused the demand of the governor to give up the records of the former eclectic board to investigators preparing to proceed against diploma mill physicians. Dr. Munch was appointed secretary of the board by Governor Catts when the latter removed the previous secretary, who was later reinstated, removed again, and Dr. Munch reappointed. The eclectic board was abolished in 1921. According to the Lakeland *Star Telegram*, the seized records of Dr. Munch contain information which is expected to lead to the discovery of many "quacks."

GEORGIA

Outbreak of Botulism.—A report from Waycross, September 4, stated that the city health department had announced the death of four persons in that city from botulism within the last thirty-six hours.

ILLINOIS

Two Die of "Milk Sick."—It was reported, September 7, that Cletus Watson and his wife, Ella, of Cowden, died within a few hours of each other of "milk sick," following an illness of only eight hours; James Mansfield died about two years ago on the same farm of "milk sick." THE JOURNAL published an article on white snake root poisoning, August 21.

Liquor Licenses Revoked.—The district prohibition administrator with headquarters in Chicago recently revoked the liquor licenses of the following physicians, it is reported, for the reason indicated:

Dr. Harry H. Davis, Rockford, failed to keep proper records, issued prescriptions unlawfully, submitted false and fraudulent reports.
Dr. Arthur C. McIntyre, Mendota, failed to keep proper records, sold unlawfully prescriptions for intoxicating liquor, issued prescriptions unlawfully.

Typhoid More Prevalent.—The state health director points out in his weekly bulletin that typhoid in Illinois is now six times more prevalent than it was in May, and twice as prevalent as it was a month ago; sixty-three cases were reported last week, the highest weekly incidence this year; 106 were reported in July and more than 200 cases in August. The average annual incidence of typhoid in Illinois is said to be about 2,000 cases, whereas twenty-five years ago the annual average was more than 20,000 cases.

Chicago

Annual Dinner.—The sixth annual dinner of the Chicago Medical Society will be held at the Hotel La Salle, Wednesday, October 13. The dinner will be informal and it is hoped that physicians and their families will bring their lay friends. There will be dancing in the Grand Ballroom and cards, and the speaker of the evening will be President Max Mason of the University of Chicago.

Award to Health Commissioner.—The Chicago *Daily News* awarded $1,000 to Dr. Herman N. Bundesen, city health commissioner, September 9, in accordance with an announcement made a year ago that such award would be made to that resident whom the *News* should adjudge to have "performed the most beautiful action or done the most beneficial thing for humanity." The work of Dr. Bundesen for the health of children, and in particular the pure milk campaign inaugurated this year, was considered as entitling him to the award.

Liquor Licenses Revoked.—The local district prohibition administrator recently issued orders revoking the liquor licenses of the following physicians, it is reported, for the reasons indicated:

Dr. Dean C. Brown, failed to keep proper records, issued prescriptions unlawfully, conspired to divert nonbeverage liquor to beverage purposes.
Dr. Arminda C. Fry, failed to keep proper records, issued prescriptions unlawfully, conspired to divert nonbeverage liquor to beverage purposes.
Dr. Joseph S. Hubert, failed to keep proper records, issued prescriptions unlawfully.
Dr. Wilbur V. Johnson, failed to keep proper records, issued prescriptions unlawfully, conspired to divert nonbeverage liquor to beverage purposes.
Dr. Yale N. Levinson, failed to keep proper records, issued prescriptions unlawfully, conspired to divert nonbeverage liquor to beverage purposes.
Dr. Otto P. Ludwig, failed to keep proper records, issued prescriptions unlawfully.
Dr. Arthur E. Price, failed to keep proper records, issued prescriptions unlawfully, conspired to divert nonbeverage liquor to beverage purposes.
Dr. David B. Rotman, failed to keep proper records, issued prescriptions unlawfully.
Dr. Edwin J. Smith, failed to keep proper records, issued prescriptions unlawfully, conspired to divert nonbeverage liquor to beverage purposes.
Dr. Rudolph Wagner, failed to keep proper records, issued prescriptions unlawfully.
Dr. Benjamin M. Wolin, failed to keep proper records, issued prescriptions unlawfully, knowingly diverted nonbeverage liquor to beverage purposes.

Promotions at Rush Medical College.—The board of trustees of the University of Chicago recently announced the following promotions in the faculty of Rush Medical College:

Dr. Thomas D. Allen, assistant clinical professor, department of ophthalmology.
Dr. Leo C. Clowes, clinical associate, department of medicine.
Dr. Herman P. Davidson, clinical instructor, department of ophthalmology.
Dr. Michael H. Ebert, clinical associate, department of dermatology.
Dr. James P. Fitzgerald, clinical instructor, department of ophthalmology.
Dr. Earle B. Fowler, assistant clinical professor, department of ophthalmology.
Dr. Richard C. Gamble, clinical associate, department of ophthalmology.
Dr. Elmer W. Hagens, clinical associate and Friedberg Fellowship, department of laryngology and otology.
Dr. Edwin F. Hirsch, assistant clinical professor, department of pathology.
Dr. Harry L. Huber, clinical instructor, department of medicine.
Dr. Harry J. Isaacs, clinical instructor, department of medicine.
Dr. George H. Jackson, Jr., clinical instructor and Senn Fellowship, department of surgery.
Dr. Fiske Jones, clinical instructor, department of obstetrics and gynecology.
Dr. Frank B. Kelly, clinical instructor, department of medicine.
Dr. Malcolm A. Kemper, clinical associate, department of medicine.
Dr. Grant H. Laing, clinical instructor, department of medicine.
Dr. Vernon M. Leech, clinical associate, department of ophthalmology.
Dr. Mabel M. Matthies, clinical instructor, department of medicine.
Dr. Harry A. Oberhelman, clinical instructor, department of surgery.
Dr. Evans W. Pernokis, clinical associate, department of medicine.
Dr. Sidney A. Portis, clinical instructor, department of medicine.
Dr. Richard B. Richter, clinical associate department of medicine (nervous diseases).
Dr. Mary G. Schroeder, clinical associate, department of medicine (neurology).
Dr. Howard M. Sheaff, clinical instructor and Dane Billings Memorial Fellowship, department of medicine.
Dr. LeRoy H. Sloan, clinical instructor, department of medicine.
Dr. George O. Solem, clinical instructor, department of medicine.
Dr. Aristoph Spare, clinical associate, department of ophthalmology.
Dr. Edward J. Stieglitz, clinical instructor, department of medicine.
Dr. Francis H. Straus, clinical instructor, department of surgery.
Dr. Ralph W. Trimmer, clinical instructor, department of medicine.
Dr. Emil G. Vrtiak, clinical instructor, department of medicine.
Dr. Alfred L. van Dellen, clinical associate, department of ophthalmology.

MARYLAND

Fewer Cases of Typhoid.—There were 130 cases of typhoid in Maryland in August, as compared with 217 in August, 1925; in the first eight months of this year, there was a total of 290 cases, and in the first eight months of 1925 there were 427.

Diphtheria Epidemic.—Eleven cases of diphtheria have developed in one block in Baltimore since September 7; cultures from the throats of all children in the block, made by the health department after the first case developed, disclosed seven carriers of diphtheria.

Personal.—Dr. John F. Hogan has resigned as director of the bureau of communicable diseases, Boston City Department of Health, effective January 1, to devote his time to private practice; Dr. Hogan has been connected with the Baltimore Department of Health for about thirteen years.

MASSACHUSETTS

Society News.—Dr. Thomas H. Halsted, professor of otolaryngology, University of Syracuse College of Medicine, addressed the Berkshire District Medical Society, Williamstown, August 5, on "Intracranial Complications of Otitis Media, Diagnosis and Treatment."

Personal.—Dr. Lewis F. Baker, superintendent, Burbank Hospital, Fitchburg, has been appointed superintendent of the Union Hospital, Fall River.——Dr. Joseph Muller has resigned from the resident staff of the Rutland State Sanatorium to engage in group practice; Dr. Muller is a graduate of the University of Budapest, Hungary.

MICHIGAN

Hospital News.—Mercywood Sanitarium, Ann Arbor, a branch of St. Joseph's Mercy Hospital for the treatment of nervous and mental diseases, was recently completed at a cost of $125,000; it will accommodate forty patients.

Dr. Ramsey Goes to Johns Hopkins.—After six years of service with the Michigan Department of Health, Dr. George H. Ramsey left Lansing, September 1, to become associate professor of epidemiology in the School of Hygiene and Public Health, Johns Hopkins University. Dr. Ramsey joined the department staff as clinician with the traveling tuberculosis clinic, later becoming director of the bureau of epidemiology and deputy commissioner of health.

State Medical Meeting.—The annual meeting of the Michigan State Medical Society was held at Lansing, September 14-16, under the presidency of Dr. Cyrenus G. Darling. Among the subjects discussed by the guests were "Some Advances in Ear, Nose and Throat Work," Dr. Harold M. Hays, New York; "Indications and Contraindications for Surgery of Duodenal Ulcer," Dr. Edward S. Judd, Rochester, Minn.; "Causes and Control of Uterine Hemorrhages," Dr. Channing W. Barrett, Chicago; "Blood Transfusions: Indications and Methods," Dr. Alfred A. Strauss, Chicago; "What Pathologic and Therapeutic Deduction Can Be Made from Hyperplasia of the Thyroid Gland," Dr. Claude E. Hoover, Cleveland; "Surgery of the Tuberculous," Dr. Irvin Abell, Louisville, Ky.; "Indications and Limitations of Deep Roentgen-Ray Therapy," Dr. Ursus V. Portmann, Cleveland; "Endoscopic Cases of General and Surgical Interest," Dr. William F. Moore, Philadelphia; "Focal Infections with Neurolabyrinthine Involvement," Dr. George W. MacKenzie, Philadelphia; "Ocular Equilibrium and Headpain," with lantern slides, Dr. Cyrus W. Rutherford, Indianapolis; "Cardiovascular System in Diseases of the Thyroid Gland"; Dr. Cyrus C. Sturgis, Boston; "The Span of Life," Dr. William A. Evans, Chicago, and "Liver Function Tests in Children," Dr. Samuel J. Levin formerly of New York.

MINNESOTA

Personal.—Dr. Stephen O. Watkins, formerly of Carlton, has been appointed resident physician of the new state tuberculosis sanatorium at Basin, Wyo.——Dr. Geza J. Kertesz, formerly of South Shore, S. D., has assumed charge of the Holman Hospital, Pine River.——Dr. Benjamin F. Simon, formerly city health officer of St. Paul, has been made chief of staff of the new Roosevelt Hospital in that city.

Society News.—At the annual meeting of the Northern Minnesota Medical Association, Crookston, in August, Dr. William W. Will, Bertha, was elected president; Dr. Joseph G. Millspaugh, Little Falls, vice president, and Dr. Frank J. Hirschboeck, Duluth, secretary-treasurer.——The Taxpayers Association of Hennepin County has made a protest against the largely increased number of cases admitted free to the county hospitals, according to the *Journal-Lancet*.——The Meeker and Stearns County Medical Society held a joint picnic at Annandale in August.——Dr. Henry L. Ulrich delivered the presidential address before the Minnesota Academy of Medicine, Minneapolis, September 15, on "Some Aspects of Hypertension."

NEVADA

State Medical Meeting.—The twenty-third annual meeting of the Nevada State Medical Association will be held at Reno, September 24-25, with headquarters at the Hotel Golden, under the presidency of Dr. Arthur J. Hood; the annual banquet will be Saturday evening. Dr. James Edward Harbinson, Woodland, Calif., will address the meeting on "Joint Pains and Uric Acid Diathesis"; Dr. Miley B. Wesson, San Francisco, on "Treatment of Malignant Tumors of the Testicle and Scrotum"; Dr. Ernest H. Falconer, San Francisco, "Blood Transfusions in Pernicious Anemia"; Drs. Philip King Brown and Leo Eloesser, San Francisco, "Symposium on Lung Compression and Surgery"; Dr. Ludwig A. Emge, San Francisco, "The Menopause and Its Treatment"; Dr. Howard E. Ruggles, San Francisco, "Cholecystography"; Dr. Clain F. Gelston, San Francisco, "Acute and Chronic Upper Respiratory Tract Infections in Children"; Dr. Edgar L. Gilcreest, San Francisco, "Study of Fractures in and About the Ankle Joint"; Dr. James F. Percy, Los Angeles, "Cautery Treatment of Carcinoma Above the Clavicle"; Dr. Howard C. Naffziger, San Francisco, "Treatment of Spinal Cord Injuries"; Dr. William W. Washburn, San Francisco, "Diagnostic Problems of Surgical Lesions of the Abdomen," and Dr. Hans Lisser, Berkeley, Calif., "Influence of the Thyroid, Pituitary and Suprarenal Gland on Functions of the Ovary."

NEW JERSEY

Hospital News.—The Paterson General Hospital, Paterson, recently opened a new $75,000 Walter B. Johnson Memorial wing.——The new West Hudson Hospital, Arlington, erected at a cost of $175,000, was opened, September 15.——The New Jersey State Firemen's Home, Boonton, has recently completed a $35,000 hospital.

Health at Newark.—Telegraphic reports to the U. S. Department of Commerce for the week, ending September 4, from sixty-five cities with a total population of about 29,000,000 indicate that the lowest death rate (6.9) was for Newark, and that the rate for the group of cities as a whole was 10.9. The death rate for Newark for the corresponding week last year was 9.3, and for the group of cities, 11.2.

Dr. Bolton Honored.—A reception was held at the Essex County Hospital, Cedar Grove, September 1, in honor of Dr. and Mrs. Robert Bolton, on which day Dr. Bolton retired from the position of first assistant physician, which he had held in that hospital for thirty-three years. The honored guests were presented with a large radio receiving set. Dr. Bolton graduated from the Columbia School of Mines and New York University Medical College. He will retire to a small farm in Patchogue, L. I.

Unlicensed Practitioners Fined.—During July, the state medical board and the state board of pharmacy entered complaints against five persons in Monmouth County for practicing medicine and selling drugs without a license. Mrs. Sophie Reale, Long Branch, was fined $200 for practicing medicine without a license; Henry Herman, West End, was fined $100 for permitting the sale of drugs in his store by an unlicensed person, and William Fogelson was fined the same amount for selling drugs without a license. Joseph Sugarman and Rae Cohen, Asbury Park, were each fined $100 for selling drugs without a license.

NEW YORK

Third District Branch Meeting.—The twentieth annual meeting of the Third District Branch of the Medical Society of the State of New York will be held at the Marmanus Bleecker Library, Albany, September 25, under the presidency of Dr. Charles P. McCabe, Greenville. The Albany County Medical Society invites members of the Third District Branch and their wives to its annual clam bake at McKown's Grove at 5 o'clock (tickets, $5); transportation will be provided if requested. Dr. Haven Emerson, New York, will address the Branch meeting on "Periodic Health Examinations"; Dr. Henry J. Noerling, Valatie, on "Postgraduate Education," and Dr. William P. Howard, Albany, will conduct a roentgen-ray

conference; among other speakers will be Drs. George M. Fisher, Utica; James E. Sadlier, Poughkeepsie, president and president-elect of the state medical society, respectively, and Drs. Daniel S. Dougherty, New York, and Joseph S. Lawrence, Albany, secretary and executive officer, respectively, of the state medical society.

New York City

Health Commissioner Starts Another Investigation.—The city health commissioner began an investigation, September 7, of reports that some inspectors of the health department had been exacting graft from proprietors of restaurants. The complaints received indicate, it is reported, that several thousand restaurant and lunchroom owners in the city have been submitting to demands for graft of minor health department officials to the extent of from $2 to $5 each week in order to permit them to violate the health code in the handling of food.

Workshop for Nervous Girls.—The Vocational Adjustment Bureau, 360 East Nineteenth Street, reopened the workshop for nervous girls, September 14. A report on the therapeutic and industrial experiment being conducted will soon be available. Girls having borderline mental disability may be sent here free of charge for vocational study and training. Among the physicians on the advisory board of the Vocational Adjustment Bureau are Drs. Edward R. Stitt and Frankwood E. Williams, Sanger Brown II, Ira S. Wile and Louis Berman.

Lutheran Hospital to Move.—A block of land at One Hundred and Eighty-Seventh Street and Bennett Avenue has been purchased by the Lutheran Hospital, Manhattan, for the erection of a hospital building, the first unit of which will cost about $1,000,000 and accommodate 200 patients. An appeal will be made to the public for $750,000 this fall. The present Lutheran Hospital, at Convent Avenue and One Hundred and Forty-Fourth Street, has 117 beds and, although founded by Lutherans, serves all creeds and races. One tenth of its work is said to have been for charity, the public paying the cost by voluntary contributions; among the directors of the hospital are Drs. Frank Grauer, John Leshure, William H. Luckett and Franklin Welker.

Columbia Extends Public Health Work.—The DeLamar Institute of Public Health of Columbia University will award the degrees of master of science and doctor of philosophy beginning with the coming year, the awards being subject to the same requirements as are in force in other departments of the university. Columbia's object is to extend to the public through channels of public education the benefits of reliable information in the protection of human health and the prevention of disease. This accords with the will of Joseph D. DeLamar, under which funds were provided for the institute. Dr. Haven Emerson, the director, is reported to have said that the staff of the Institute of Public Health is now authorized to train sanitarians, health officers, directors of medical services of industrial plants, vital statisticians and others who wish to qualify in a postgraduate school. The institute is a part of Columbia University School of Medicine.

Society News.—The Physician's Square Club of Greater New York visited Philadelphia, August 18, to initiate the newly organized club of that city; the annual convention of the Physician's Square Clubs of America will be held in Philadelphia the last week in September.——The Cambridge (England) University Medical Society, on its tour of medical centers, attended a ball game, September 4, between the New York Giants and Boston Braves at the Polo Grounds, and visited the Rockefeller Institute for Medical Research, the College of Physicians and Surgeons and the new Medical Center, which is being erected at One Hundred and Sixty-Eighth Street and Broadway; they left for New Haven, September 6.——The Women's Medical Association of New York City will meet on the second Wednesday in October instead of the third, as previously announced at the New York Academy of Medicine, 17 West Forty-Third Street. Dr. Connie M. Guion will speak on "Cardiac Therapy," and Dr. Ada C. Reid on "Electrocardiography"; cases will be shown from 8 to 8:30.

NORTH CAROLINA

Hospital News.—Dr. W. S. Rankin addressed the Rowan County Medical Society at a barbecue meeting, September 3, on "The Benefits of County Hospitals"; Rowan County will vote at an election soon on a bond issue for the establishment of a county hospital.——The Caldwell Hospital, Lenoir, was formally opened, September 3; the staff includes Drs. R. W. Petrie, L. A. Crowell, J. D. Rudisill and M. T. Mitchell.

Physicians Volunteer Aid in Rehabilitation Work.—The supervisor of rehabilitation in North Carolina, H. L. Stanton, has submitted a report to the federal board for vocational education stating that rehabilitation work has been retarded in North Carolina on account of the lack of the facilities of a state hospital such as are found in many states, or other provisions for treatment and the correction of deformities. A plan of procedure was submitted, however, to the orthopedic surgeons at their recent state meeting whereby the state was to be divided into seven zones and a surgeon placed in charge of each for the purpose of holding clinics monthly, the place to be determined by the surgeon of the rehabilitation service. According to the *U. S. Daily*, the surgeons unanimously agreed to accept this plan, and at the close of the fiscal year eleven clinics were being held monthly throughout the state. The results accomplished in this short time amounted to the examination of 1,024 cripples, of whom 140 were 16 years of age or more; the treatment of 327 patients, of whom 122 were 16 years of age or more; thirty-eight orthopedic operations had been performed and prosthetic appliances fitted in fifty-seven cases. The vocational handicap in some of these cases has been entirely removed through orthopedic treatment and diminished in others. The physicians assisting in this work examined without charge all patients attending the clinics, and treated without charge all indigent cases through the application of plaster casts, braces and orthopedic shoes, and by corrective exercises at the clinic. They also gave their service free to those patients requiring operations in hospitals. The expenses of the clinics are borne by such organizations as the Rotary, Kiwanis and Lions clubs, and hospital beds are provided by hospitals and civic organizations.

OHIO

Typhoid Epidemic.—An outbreak of typhoid was reported from Wellington, September 10, which amounted then to eighty-three cases and two deaths; fifteen new cases had been reported within the last forty-eight hours.

Member Wills Half of Estate to County Society.—The late Dr. John L. Washburn, Youngstown, provided in his will that, on the death of his wife, one half of his estate shall be turned over to the Mahoning County Medical Society for a new home. The estate has been probated and estimated at $100,000. The state medical journal asks, "What greater thing, what nobler thing could a man do than provide something of this kind for the profession he loved and for the profession that loved him?"

Report of Committee on Penitentiary.—A committee of eight Columbus physicians, appointed by the governor months ago to investigate and make recommendations about health conditions in the state penitentiary, has submitted its report. Among the committee's recommendations were (1) complete overhauling of the plumbing and lighting system; (2) construction of an additional sanitary cell block properly ventilated and with plenty of sunlight; (3) replacement of the two old cell blocks with new ones or overhauling the old ones and supplying the necessary sanitary facilities, and (4) increase in medical staff, so that a physician can be detailed to examine and note any physical or mental defect of prisoners when received.

Association Enlarges Headquarters.—A special committee, appointed by the president of the Ohio State Medical Association, has completed an agreement whereby the headquarters occupied by the association for the last ten years will be leased for a term of five years and enlarged. Under the new arrangements, the headquarters now comprise a room for meetings of the council and committees, three offices and a mail and storage room. The details of the arrangement as well as of the equipment were worked out by the committee, and they anticipate demands that may arise for increased activities. The enlarged quarters, which have already been occupied, are on the third floor of the Physician's Building, 131 East State Street, Columbus; members are urged to visit the office when passing through Columbus.

Postgraduate Work in Second Councilor District.—The annual postgraduate course of the Second Councilor District Medical Society will be held at Dayton, September 27–October 1; the fee for the course will be $10, and luncheon will be served free to members at the Miami Hotel. The guests include Dr. Dean Lewis, professor of surgery, Johns

Hopkins University, Baltimore; Dr. Henry F. Helmholz, Mayo Clinic, Rochester, Minn.; Maud Slye, University of Chicago; Dr. Charles P. Emerson, Indianapolis; Dr. Irvin Abell, Louisville, Ky.; Dr. Charles F. Hoover, Cleveland; Dr. Stewart R. Roberts, Atlanta, Ga., and Dr. Paul H. Ringer, Asheville, N. C.; subjects of interest to general practitioners and specialists will be discussed. The secretary of the Second Councilor District Medical Society is Dr. Arthur O. Peters, Dayton.

County Society News.—Dr. Joseph C. Placak, Cleveland City Hospital, Cleveland, addressed the Geauga County Medical Society, Burton, recently, on "Tuberculosis."——The Tri-County Medical Society—Mercer, Van Wert and Paulding—was addressed recently at the Willow Bend Country Club, Van Wert, by Dr. Lloyd M. Otis, Celina, on "Diathermy in Bone and Chest Diseases," and by Dr. Clarence E. Huston, Paulding, on "Medical Inspection of Rural Schools."——Stark County Medical Society held its annual outing at Congress Lake, July 20; there was boating, golf, cards and an address by Judge Charles Kreichbaum, Canton; more than 100 persons were in attendance.——Dr. Milton B. Cohen, Cleveland, addressed the Richland County Medical Society, Mansfield, recently, on "Diagnosis of Jaundice" and "Recent Advances of Allergy."

PENNSYLVANIA

Personal.—Dr. Christian Gruhler has been reelected president of the board of health of Shenandoah.——Dr. Frederick A. Rupp, Lewistown, is a candidate for Congress from the Eighteenth Congressional District.——Dr. J. Howard Swick, Beaver Falls, has been nominated on the Republican ticket for representative to Congress.

Hospital News.—The Good Samaritan Hospital, Lebanon, will soon construct an addition costing about $150,000.——A drive was opened for $250,000, August 20, for a new Quakertown hospital at Quakertown.——The New Reading Hospital, Reading, will be opened, October 2, when the building and equipment may be inspected.——The directors of St. Joseph's Hospital, Carbondale, announced that a new 100 bed hospital would be built at a cost of more than $250,000.

Society News.—Dr. William E. Robertson, Philadelphia, addressed the Lancaster City and County Medical Society, September 1.——The McKean County Tuberculosis Society examined 110 persons recently at clinics held at Port Allegheny, among whom were found five active cases of tuberculosis, it is reported, and ten arrested cases.——Dr. Harry M. Stewart, Johnstown, addressed the Cambria County Medical Society, August 12, on "Diagnosis of Gallbladder Disease."——Dr. Michael A. Burns, associate in nervous and mental diseases, Jefferson Medical College, addressed the September meeting of the Berks County Medical Society, Reading, on "The Mental Hygiene Movement in Pennsylvania."

Health Department Motorized Units.—The state health department's bureau of engineering reports that the motorized laboratories engaged in the highway water supply work have examined nearly 2,000 supplies, more than one half of which were rejected. The department, in view of the large number of rejections, advises the traveling public to drink only from supplies marked with the safe water placard and thus avoid the possibility of contracting typhoid.——Two motorized milk laboratories, under the direction of the state health department, are making an investigation in Allegheny County of pasteurizing plants and farms where raw milk is sold direct to consumers; this involves the rural sections and ninety-nine separate municipalities.——The state health department's motorized health car which has been operating in Fulton, Venango, Centre and Bradford counties completed its work the first week of September. Its staff, three physicians, two dental hygienists and two nurses, since June 1, examined 4,250 children in the rural communities; the staff included Dr. Rose S. Reis, Dr. Faith J. Fairfield, Dr. George B. Faries, Miss Mary Tully and Miss Mary Willis, dental hygienists.

Philadelphia

Society News.—Dr. Carey J. Vaux, director of public health of Pittsburgh, will address the Philadelphia County Medical Society, September 22, on "Pneumonia Quarantine"; a dinner in honor of Dr. Vaux will be given preceding the meeting.

Dr. Smith Honored.—Dr. Edgar Fahs Smith, former provost of the University of Pennsylvania, was presented the Joseph Priestley Medal by the American Chemical Society, in session at the Bellevue-Stratford, September 6-10, and was also honored with renewal of a Ph.D. degree presented fifty years ago by the University of Goettingen, Germany.

SOUTH CAROLINA

Personal.—Dr. William Atmar Smith was recently appointed chairman of the board of health and welfare of Charleston.——Dr. William G. Bodie, Wagener, has been appointed health officer for Aiken County.

Society News.—The Chester County and Union County medical societies held a joint meeting at Lockhart, recently, and were addressed by Dr. William R. Wallace, Chester, on "Crawford W. Long"; by Dr. Arthur P. McElroy, Union, on "Surgical Shock," and by Dr. William J. Henry, Chester, on "Vincent's Angina."

TENNESSEE

Explosive Epidemic.—It was reported, September 9, that nearly 200 residents of Dyersburg were confined to their homes as the result of an outbreak of suspected "milk poisoning," and that many of them had been "violently" ill since the preceding Sunday. Pending an investigation by health official, a dairy was restrained from further delivery of milk.

WASHINGTON

Hospital News.—The new forty bed Centralia General Hospital, Centralia, was opened in July.——The Seattle Swedish Hospital Association has purchased a site at Marion Street and Minor Avenue for a 100 bed addition to the hospital.——Clallam County will vote in November on a bond issue for a city-county hospital.

Society News.—Dr. Willis C. Campbell addressed the annual meeting of the Seattle Orthopedic Society, September 10-11; the King County Medical Society held a special joint meeting with the Seattle Orthopedic Society, September 10, and was addressed by Dr. Campbell on "Treatment of Post Traumatic Conditions and Complications."——The annual golf tournament of physicians and dentists was held at the New Inglewood Golf Club House, August 26; the dentists won, 36 to 37; 150 members of these professions attended the banquet in the evening, and the success of this occasion assures the establishment of an annual medical-dental golf match. Twenty-three different firms in the city presented prizes for this occasion.——Dr. Frederick A. Slyfield addressed the King County Medical Society, September 13, on "General Routine Care of the Tuberculous Patient"; there was a symposium on such special forms of treatment of pulmonary tuberculosis as heliotherapy (Dr. John M. Henderson), pneumothorax (Dr. Charles R. Castlen), tuberculin (Dr. Walter S. Griswold), and thoracoplasty (Dr. Philipp Schonwald).

WEST VIRGINIA

Personal.—Dr. Hugh Dunn has been elected president of the board of education of Richwood.——Dr. Mortimer D. Cure has resigned as health officer of Lewis County and been appointed superintendent of the Weston State Hospital.——Dr. John Thames, Little Rock, Ark., recently appointed Kanawha County health officer, took up his new duties, September 1.——Dr. John W. Niedermeyer has been appointed city health officer of Benwood.——Drs. Frank LeMoyne Hupp and Robert J. Reed, Wheeling, received the honorary degree of doctor of science from Washington and Jefferson College at the commencement in June.

County Society News.—About eighty physicians attended a meeting of the Fayette County Medical Society, Oak Hill Hospital, August 10, as guests of Drs. John H. McCulloch and Albert U. Tieche, proprietors of the hospital; Dr. Claude C. Coleman, Richmond, Va., addressed the meeting on "Brain Tumors"; Dr. Walter E. Vest, Huntington, "Pericarditis with Effusion," and Dr. Ray M. Bobbitt, Huntington, on "Ureteral Obstruction." This was considered by the state medical journal as one of the society's best meetings.——The Kanawha Medical Society, embracing Boone, Clay and Kanawha counties, met at the Hotel Kanawha, Charleston, September 7, and was addressed by Dr. Edwin P. Sloan, Bloomington, Ill., on "Surgical Aspects of Goiter."——Dr. Charles L. Parks addressed the Marion County Medical Society in July on "Hypertension," and Dr. Carl J. Carter on "Obstetrics"; the society is planning to hold one meeting a year in Fairview, Mannington, Farmington, Monongah and Worthington, and is making an effort to stimulate its own members to give the addresses at the stated meetings——Mercer County Medical Society invited the McDowell County Medical Society to join them in a picnic at Shawnee Lake in August; David B. Lepper, city health officer of Bluefield, addressed the society recently on "The Health Department's Preventive Health Program."

CANADA

Dr. Halpenny Goes to Texas.—Dr. Jasper Halpenny, formerly professor of surgery, Faculty of Medicine of the University of Manitoba, has gone to Texas on account of ill health to engage in fruit farming. Before his departure, an address and a gift were presented to Dr. Halpenny by various medical organizations.

Professor Nicholls Resigns.—Dr. Albert G. Nicholls, for about twelve years professor of pathology and bacteriology, Dalhousie University, Halifax, and pathologist to the Province of Nova Scotia and director of provincial public health laboratories, recently resigned these positions. Dr. Nicholls formerly was assistant professor of pathology at McGill University Faculty of Medicine, Montreal, associated with the late Prof. John G. Adami.

Association Postgraduate Work.—The Canadian Medical Association having arranged for postgraduate extension courses in the provinces, the first course was conducted in Saskatchewan by Drs. Edward H. Mason, Montreal, John G. McDougall, Halifax, and Velyien E. Henderson, Toronto, who addressed the Northeastern Saskatchewan District Medical Society, at Yorkton, on "Diabetes," "The Prostate," and "Therapeutics," respectively, and then held clinics at the hospital in the afternoon and evening; they next addressed the Battleford District Medical Society and held a clinic at the Notre Dame Hospital; at a banquet at the Mental Hospital in the evening, Dr. McDougall presented a paper on "Acute and Chronic Conditions of the Gallbladder," illustrated with lantern slides; Dr. Mason, a paper on "Iodine Treatment of Different Types of Toxic Goiter," and Dr. Henderson, a paper on "Use of Various Drugs." The lecturers next met the Prince Albert District Medical Society at a clinic at Victoria Hospital, where several local physicians consulted with the guests concerning their obscure cases; at a clinic at the Holy Family Hospital, Dr. McDougall discussed "Fractures," and Dr. Mason, "Early Pulmonary Tuberculosis"; at a dinner in the evening, there were talks by the guests on "Glycosuria," "Drugs" and "Blood Pressure." The lecturers then met the Saskatoon District Medical Society, then the district medical society at Moose Jaw, and the district medical society at Regina; the last meeting of this tour was with the Swift Current District Medical Society; here also there were clinics, consultations, lectures and general discussions; Dr. Henderson gave a talk on "Vitamins and Endocrines." The correspondent of the *Canadian Medical Association Journal* gives an excellent account of this tour, which, apparently, was very successful.

Society News.—At the annual meeting of the New Brunswick Medical Society, Moncton, Dr. Levi M. Curren, St. John, was elected president; Drs. John B. McKenzie, Loggieville, and Clarence J. Veniot, Bathurst, vice presidents, and Dr. John R. Nugent, St. John, secretary. The next annual meeting will be held at Chatham.——Dr. Ross L. Blackadar, Port Maitland, was elected president of the Medical Health Officers of Nova Scotia for the ensuing year, and Dr. Arthur C. Jost, Halifax, secretary-treasurer.——At the forty-sixth annual meeting of the Ontario Medical Association, Dr. Edgar Brandon, North Bay, was elected president; Drs. Weston Krupp, Woodstock and Ernest A. McQuade, Trenton, vice presidents, and Dr. Thomas C. Routley, Toronto, secretary.——The Vancouver Medical Association has requested the Canadian Medical Association for three physicians to make a tour for extramural postgraduate instruction in British Columbia this fall to speak on orthopedic surgery, medicine dealing especially with such tests as the Dick and Schick tests, and obstetrics and gynecology.—— Dr. Robert G. Armour recently addressed the Grey County Medical Society, Markdale, on "Diagnosis and Treatment of Encephalitis Lethargica." —— Dr. Frederick B. Bowman, Hamilton, addressed the Simcoe County Medical Society, Allandale, recently, on "Gastric and Duodenal Analysis with Reference to Nonsurgical Biliary Drainage."——Dr. Cecil A. Rae, Toronto, recently addressed the Renfrew County Medical Society, Renfrew, on "Ulceration of the Mouth, Pharynx and Tongue."——Dr. Lorimer J. Austin, Kingston, recently addressed the Thunder Bay Medical Society on "Injuries to the Elbow in Children."——Dr. George Stewart Cameron, Peterboro, Ont., guest of honor at the annual meeting of the British Columbia Medical Association, Victoria, spoke on reorganization of the Ontario Medical Association in 1918; the correspondent in the *Canadian Medical Association Journal* says of this address, "When one hears of forty-seven district medical societies all running full blast with some $25,000 expended in five years on extension work and postgraduate lecturing, smaller associations are apt to become envious. Nevertheless, the British Columbia Association looks forward to the time when it also will have attained a similar degree of vitality." Dr. John H. MacDermot was elected president of the British Columbia Medical Association; Dr. Harold E. Ridewood, Victoria, president-elect; Dr. Wallace A. Wilson, vice president, and Dr. Theodore H. Lennie, secretary-treasurer.

GENERAL

Directory of Medical Reserve Officers.—Under the direction of the Ninth Corps Area Surgeon, Col. E. L. Munson, U. S. Army, Presidio of San Francisco, there has been published a directory of the medical department reserve officers in the ninth corps area (California, Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming). It contains the names, rank, addresses and assignments of 2,170 reserve officers, classified by states and by corps, and it will be reissued periodically as changes require.

Fireworks Without Phosphorus.—The manufacturers of fireworks ceased manufacturing all types of fireworks containing white (yellow) phosphorus, August 15, in accordance with an agreement with the U. S. Department of Labor. This action is the result of an investigation of phosphorus necrosis in the manufacture of fireworks, conducted by the department of labor. The investigation covered exposure to phosphorus poisoning also in the manufacture of vermin exterminator and in the phosphorus extracting industry. As a result of eating phosphorus fireworks, nine children died following the Fourth of July, 1925, according to the American Museum of Safety.

Congress of French-Speaking Physicians.—Dr. L. T. Dube, Notre Dame du Lac, is to preside at the public session of the ninth congress of the Association des médecins de langue française de l'Amérique du Nord, Montreal, Sept. 21-24, 1926. The opening meeting will be devoted to "Social Service," Dr. O. Desjardins, Trois Rivières, presiding. Dr. L. Bernard, Paris, will preside at the session devoted to "Prophylaxis of Tuberculosis"; one morning is to be given to "Prophylaxis of Syphilis in Children," and one to psychiatry. Dr. A. Brousseau, Quebec, will describe the new mental hygiene and psychiatry clinic. Among the official delegates from France are Profs. M. Pinard, E. Rist, Armand-Delille and Weill-Hallé. The *Union médicale du Canada* gives further details.

American Hospital Association.—The governor of New Jersey will deliver an address of welcome to the American Hospital Association at its annual meeting, Atlantic City, N. J., September 27-October 1. The administration section will devote Wednesday afternoon to "What Shall Be Done For and With the Middle Class Patient," which symposium will consist of discussions on hospital construction, hospital administration, the municipality, the board of trustees, the physician, the patient and nursing. At a general session, Friday morning, among others, Dr. Norman E. Titus, New York, will speak on "What Is Physical Therapy?" The Hospital Dietetic Council will be addressed by Dr. Louis H. Newburgh, Ann Arbor, Mich., on "Amino-Acids and Their Relations to Health and Disease," and by Dr. Henry J. Spencer, New York, on "Recent Findings in Diabetes." The American Occupational Therapy Association will meet, September 27, in the Right Central Pier Hall, and the Children's Hospital Association of America, September 30, in the Left Central Pier Hall.

Society News.—Dr. Wesley Bourne, Montreal, Canada, among others, will address the annual meeting of the Mid-Western Association of Anesthetists, Kansas City, Mo., October 12-14, on "Usefulness of Intratracheal Anesthesia," and will demonstrate intratracheal methods at clinics.—— The American College of Physical Therapy will hold its fifth annual meeting at the Drake Hotel, Chicago, October 18-23, under the presidency of Dr. John S. Coulter, Chicago.—— At the recent meeting of the American Academy of Physiotherapy, New York, Dr. Charles P. Hutchins, Syracuse, was elected president; Dr. Frank J. Novak, Jr., Chicago, and Dr. William L. Clark, Philadelphia, vice presidents, and Dr. Byron S. Price, New York, secretary-treasurer, reelected; directors elected include Drs. Frank B. Granger, Boston, Grant E. Ward, Baltimore, Burt W. Carr, Washington, D. C., Harry C. Westervelt, Pittsburgh, Frank A. Davis, Boston, and Leslie C. Sammons, Shelbyville, Ind.——The Tri-State Medical Society, which recently met at Huntington, W. Va., elected Dr. Charles E. Holzer, Gallipolis, president; Drs. John E. Cannaday, Charleston, and James M. Salmon, Ashland, vice presidents, and Dr. Festus O. Marple, Huntington,

secretary-treasurer, reelected. The next meeting will be at Huntington in January; the *West Virginia Medical Journal* was made the official journal of the society.

Additional Hospitals Approved for Training Interns.—Since the list of Hospitals Approved for Internships was published in THE JOURNAL, April 3, the Council on Medical Education and Hospitals has approved the following additional hospitals for the training of interns:

Santa Fe Coast Lines Hospital, Los Angeles, Calif. Affiliated with White Memorial Hospital, Los Angeles, and the maternity service of the Los Angeles City Health Department, for training in pediatrics and obstetrics.
Jennie Edmundson Memorial Hospital, Council Bluffs, Iowa.
St. Joseph Hospital, Lexington, Ky.
U. S. Marine Hospital No. 14, New Orleans, La. Affiliated with the Touro Infirmary for training in obstetrics, gynecology and pediatrics.
West Baltimore General Hospital, Baltimore.
Missouri Methodist Hospital, St. Joseph, Mo.
Christian Hospital, St. Louis.
St. Mary's Hospital, St. Louis.
Lincoln General Hospital, Lincoln, Neb.
Starling-Loving University Hospital, Columbus, Ohio.
Mercy Hospital, Hamilton, Ohio.
St. Joseph's Hospital, Reading, Pa.

Also the following naval hospitals, each of which has affiliated with one or more civilian hospitals for intern training in obstetrics:

U. S. Naval Hospital, Chelsea, Mass.
U. S. Naval Hospital, Brooklyn.
U. S. Naval Hospital, Mare Island, Calif.
U. S. Naval Hospital, Norfolk, Va.
U. S. Naval Hospital, Philadelphia.
U. S. Naval Hospital, San Diego, Calif.
U. S. Naval Hospital, Washington, D. C.

American Public Health Association.—The fifty-fifth annual meeting of this association will be at the Hotel Statler, Buffalo, October 11-14. The program has been arranged in four sections—general sessions; special sessions; scientific section meetings, and a program arranged by the New York state conference of health officers and public health nurses. A new special feature will be the informal motion picture program of health pictures on Monday, Wednesday and Thursday afternoons from 5 to 6. Governor Smith and Mayor Schwab, Dean C. Sumner Jones, of the University of Buffalo School of Medicine, and the health commissioner of Buffalo, Dr. Francis E. Fronczak, will deliver addresses of welcome. Among the subjects of symposiums will be "Health Demonstrations in the United States," "Rural Health Work," "Health Education and Publicity," "Health Administration," "Municipal Health Administration," "Ventilation" and "Milk." The usual half-day trip for all delegates this year will be to Niagara Falls, where there will be also specially conducted trips through some of the large manufacturing plants. Among the many questions submitted for discussion at the forum session, four have been selected: 1. Shall we abandon placarding homes in which whooping cough and measles are isolated? 2. Can physical examinations of food handlers be justified as a function of the health department? 3. Does not our knowledge of scarlet fever warrant a shortening of the minimum period of quarantine? 4. Is it safe to omit dairy farm inspection from a program of milk control? Other questions may be submitted from the floor following the discussions. There will be a reception and dance, Monday evening.

Special Committee to Survey Government Hospital.—The secretary of the interior, Dr. Hubert Work, has announced the organization of a special committee to conduct a survey of St. Elizabeth's Hospital, the government's hospital for the insane located at Washington, D. C. In his letter inviting the members of the committee to serve (gratuitously), Dr. Work stated that as the government's representative he desired the committee to determine (1) whether or not medical treatment there is recognized as scientifically modern; (2) if the medical staff is qualified; (3) if the nursing personnel is sufficient in number and competent; (4) if the housing space is adequate and sanitary; (5) if the food is wholesome and liberal; (6) if unnecessary mechanical restraints are employed; or, (7) in short, if St. Elizabeth's Hospital is or is not in fact a modern hospital for the most humane care, custody and curative treatment of those necessarily secluded from society for the primary purpose of restoring them to their former positions in the community. He referred to the fact that St. Elizabeth's Hospital was under the general supervision of the Secretary of the Interior and that it had indirectly been made the subject of congressional investigation during the last winter. Invitations to serve on this special committee were issued to Dr. Harry W. Mitchell, superintendent, Warren State Hospital, Warren, Pa.; Dr. George M. Kline, commissioner, Massachusetts Department of Mental Diseases, Boston; Dr. William L. Russell, superintendent, Bloomingdale Hospital, White Plains, N. Y.; Dr. Owen Copp, consultant, Pennsylvania Hospital, Philadelphia, and Dr. Samuel E. Smith, provost, Indiana University, Indianapolis. Dr. Russell was unable to accept the invitation and Dr. Arthur H. Ruggles, superintendent, Butler Hospital, Providence, R. I., was appointed. The committee will begin its work, September 20.

LATIN AMERICA

University News.—The chief executive of Paraguay has requested authority from congress to engage the services of four foreign professors for the faculty of medicine of the University of Asunción.

Hospital News.—The City of La Paz, Bolivia, has appropriated 100,000 bolivianos to build a tuberculosis hospital on a site adjoining the Miraflores Hospital, which will have three sections, one each for men, women and children.

Personal.—The *Revista de Ciencias Médicas* of Buenos Aires states that Dr. F. Jiménez Asúa, Madrid, is to give a three months' course of lectures on hematology and allied topics at the University of Cordoba, Argentina.——Dr. C. Robertson Lavalle, Buenos Aires, was the guest of honor recently at a dinner given in tribute to his success in treating tuberculosis of the joints, his implant method was described in THE JOURNAL, March 20, page 916.——Dr. Avelino Gutiérrez was tendered a banquet recently on the occasion of his retirement from the chair of anatomy at the University of Buenos Aires. ——Dr. A. Barata da Rocha, on the editorial staff of certain Portuguese medical and lay publications, is visiting South American countries to report on the progress of science.

FOREIGN

Typhoid Outbreak in Germany.—An outbreak of 150 cases and three deaths of typhoid was reported from Hanover, Germany, September 11, due, it is said, to pollution of water brought about by the recent floods. A press report, September 14, states that the epidemic amounted then to 1,200 cases under treatment.

Psychiatrist Wanted.—The University of Sydney, Australia, invites applications for the professorship of psychiatry. According to the *Lancet*, August 21, the applicant selected will be expected to enter on his duties, March 1, 1927, at a salary of £1,100, with an allowance of £150 for traveling expenses to Sydney from Europe. Applicants should have served in a mental hospital and be interested in clinical rather than pathologic work.

Professors Awarded Damages from Copyist.—The Paris court of appeals recently confirmed the sentence imposed on a man who made shorthand copies of lectures delivered by various professors in the medical faculty and the faculty of pharmacy and offered them for sale to the students. The deans of the two faculties brought the suit against him, but the court required the ten professors themselves to make the definite charge; each was awarded 100 francs damages, the amount asked.

Control of Serums Used in Prophylaxis and Treatment.—The public health service of Germany has appointed a committee to study ways and means for control of human serums used in prophylaxis and treatment of measles and other diseases. The recent death of a child from staphylococcus sepsis after a preventive injection of measles convalescent's serum, obtained from a hospital, was explained by similar contamination of one out of three other vials sent by the hospital. Dr. A. Schlossmann places the blame for this tragedy on the heedlessness of the national and state governments in respect to the subject of obtaining, testing and dispensing serums; his article in the *Deutsche medizinische Wochenschrift* is entitled "An Appeal for Protection Against Protecting Serums."

Deaths in Other Countries

Dr. **Robert H. Cole,** physician and lecturer in mental diseases, St. Mary's Hospital, Paddington, England, recent president of the psychiatric section of the Royal Society of Medicine, author of Textbook of Psychiatry and former vice president and secretary of the section of psychologic medicine of the British Medical Association, August 10, aged 60.—— Dr. **C. H. Kuhn,** professor emeritus of anatomy at the University of Amsterdam, aged 77.——Prof. **G. Thibierge,** Paris. ——Dr. **F. Commandeur,** professor of obstetrics at the University of Lyons.——Dr. **F. von Hofmeister,** chief of staff of a Stuttgart hospital, aged 59.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 28, 1926.

The Evils of the Insurance Act

TOO MUCH DRUGGING

Sir Walter Kinnear, controller of the insurance department of the ministry of health, declared at a meeting of one of the societies that one of the most disheartening things in the administration of the insurance act was the large sum of money spent every year on drugs, amounting to between 10 and 10½ million dollars. This represented a great wastage of money, and unless there was some diminution it would be necessary to make efficient administrative arrangements which would tend to check that expenditure. He was convinced that timely treatment in convalescent homes would be of more value than all the drugs in the British pharmacopeia. I may point out that the wastage of money on drugs could have been foreseen as inevitable by any one acquainted with medical practice in this country, but it evidently never troubled the politician mainly responsible for this socialistic scheme. Our working classes have a childlike faith in medicine, for real as well as imaginary ills, and are drugged a great deal too much even when they have to pay. But the insurance act provided them with medical attendance, which practically always means drugs, without having to make any payments. The panel physicians are evidently too complaisant in prescribing. Once again is seen a fundamental defect of all socialistic schemes—the encouragement of waste.

UNJUSTIFIED SICKNESS CLAIMS

The widespread unemployment resulting from the coal strike has caused a serious drain on the national insurance funds. The minister of health has noted with much concern the abnormal increase during the last two months in the number of insured persons receiving sickness and disablement benefit and the resulting heavy expenditure. Information available from other sources does not indicate the prevalence of any marked epidemic or exceptional outbreak of sickness which would account for this increase in the number of cases of certified incapacity, and it is significant that the ratio of expansion is not uniform throughout the country and that its distribution corresponds closely with the incidence of unemployment due to the coal strike. The examination of a large number of cases referred to referees, and the high proportion of claimants who sign off in preference to presenting themselves for examination suggest that large numbers of insured persons have succeeded in obtaining or continuing to obtain medical certificates although they were not in fact incapable of work. The minister cannot escape the conclusion that many physicians in the industrial areas mainly affected have failed to appreciate the danger that in times of acute unemployment there is inevitably a tendency to magnify minor ailments and to claim sickness benefit in circumstances in which, under ordinary conditions, no claim would be made. Normally the difference between sickness benefit and average earnings is sufficient to afford the employed person a substantial inducement not to leave work and to return to it as soon as he is able to do so; and physicians have, no doubt, in the past proceeded on the assumption that in cases in which there were no definite physical signs, the patient's account of his subjective symptoms might, in general, be accepted in the absence of any indication to the contrary. But in many areas this economic safeguard against ill founded claims no longer exists, and the minister fears that physicians have not sufficiently realized that all increase in the number of claims in itself necessitates more than ordinary care in considering whether the conditions for the receipt of sickness and disablement benefit have been fulfilled. He therefore has to remind physicians that the statutory test of title to these benefits is that the insured person has been rendered incapable of work by some specific disease or bodily or mental disablement, and that strict regard must be had to this criterion in considering all cases coming before them. No physician should allow the economic position of the applicant for a certificate to lead him to adopt a less stringent standard than the acts require. Any laxity in the issue of certificates, whether unconscious or deliberate, is extremely unfair to those physicians who have continued to take a strict view of their obligations. Indulgence to individual members of approved societies must deprive members in general of sums that might otherwise have been used in providing additional benefits in the future. This leakage again illustrates the disastrous consequences inherent in all socialistic measures. They show "the seamy side" of the insurance act and should serve as a warning to America against following such an example.

Irresistible Impulse as a Defense in a Murder Case

In 1923, as was reported in THE JOURNAL (Jan. 6, April 28, May 5, 1923), an important committee of official lawyers, with Lord Justice Atkin as president, was appointed to report on the vexed question of criminal responsibility, which has long been a bone of contention between the medical profession and the judges. The report was a victory for the former, as it went much further than the famous McNaghten formula. The committee was satisfied that cases of mental disorders did exist in which the impulse to do a criminal act recurs with increasing force until it is, in fact, uncontrollable. The committee found that cases were not uncommon in which mothers, normally devoted to their children, cut their children's throats or otherwise took their lives. In such cases, the committee said, the accused knows the nature of his act and knows that it is wrong, and the McNaghten formula is not logically sufficient. The committee thought that such cases should be brought expressly within the law by decision or statute. It should be made clear that the law does recognize irresponsibility on the ground of insanity when the act was committed under an impulse which the prisoner was, by mental disease, in substance deprived of any power to resist. The committee gave some grounds for thinking that the existing law was already as thus stated. However, the court of criminal appeal has refused to accept the principle that irresistible impulse may be a good defense in criminal trials. A man, aged 24, but described as having the intelligence of a boy of 14 or 15, was convicted of the murder of his stepbrother. No fewer than eight of his relatives had died in psychopathic institutions or been confined in them. He rose in the night, put on his best clothes, went downstairs, procured an ax, and with two blows killed his stepbrother as he lay in bed. He was convicted of murder, and his appeal failed, though the government has since commuted his sentence. For the defense there was the recommendation made by Lord Justice Atkin's committee quoted above. The committee added that it might require legislation to bring this rule into effect, but parliament has done nothing, and now the judges have refused to intervene. The court of criminal appeal gave its usual answer that the judge had summed up fairly at the trial, and the jury had found a verdict supported by evidence, and that the further disposal of the accused man rested with the home office.

Effect of Milk on the Growth of Boys

Investigations carried out during the last four years by Dr. H. C. Corry Mann, on behalf of the medical research

council, with regard to diets for boys during school age, show a curious result. The addition of a pint of milk a day to a diet, which by itself satisfied the appetite of growing boys fed on it, converted an average annual gain of weight of 3 85/100 pounds (1.75 Kg.) per boy into one of 6 98/100 pounds (3.2 Kg.), and an annual average increase of height from 1 84/100 inches (4.7 cm.) to 2 63/100 inches (6.7 cm.). This unmistakable betterment in nutrition was proved by trial to be due, not to the relatively small increase in the fuel value of the dietary, nor to the extra protein supplied in the milk, but rather to more specific qualities of milk as a food. The improved gains in weight and height, taken as the measurable characters in this inquiry, were found to be accompanied regularly by improved general health and by improvement in what may perhaps be called "spirit."

Protest Against New Dangerous Drugs Regulations

In a previous letter to THE JOURNAL, the new dangerous drugs regulations were described. The council of the National Medical Union, an association of physicians opposed to the panel system, takes exception (1) to the proposal to set up a tribunal composed of three physicians and one legal assessor to deal with cases of infringement of the regulations, instead of these cases being dealt with, as at present, by the ordinary courts; (2) to the proposal to empower the home secretary to withdraw from physicians found guilty by the tribunal the right to possess and even to prescribe dangerous drugs, such penalty having the effect of making it impossible for such physicians to continue in practice; (3) to the proposal to make the home secretary the final authority without right to appeal to the courts of law, which proposal is contrary to the basic principles of British justice; (4) to the proposal to place on nondispensing physicians the obligation of keeping records of their purchased supplies of the dangerous drugs, on the grounds that the properly made out prescription or order, which is retained by the wholesale or retail chemist, contains all necessary information and is sufficient safeguard. The union holds that the attempt which is being made in various directions to bring the members of the medical profession under bureaucratic control must be resisted; otherwise the profession will become pawns in the hands of officials and government inspectors.

School Children's Health in London

The annual reports for the year 1925 of the school medical officer for London contains an interesting comparison with the conditions thirty years ago. Twenty-five years of education had at that period already effected a marked improvement in the general appearance of the child population. The days "of unregulated child labor, of boy bootblacks and child crossing-sweepers" had gone, school places had been found for all children of school age, the habit of regular attendance was almost acquired. But nothing was being done for the physical condition of the children. There were no school physicians, no school dentists, no system of special schools, no proper physical education, no children's baths, no school hygiene, no school feeding. There was scarcely an indication of that movement toward physical care of the school child which has been such a prominent feature in the later history of the education system. The growth in the medical activities of the council has been consistent and rapid. In 1910, arrangements were made with seven hospitals for the treatment of 12,700 children, and in 1912 there were three *ad hoc* "treatment centers." In 1925 there were seventy-three hospitals and treatment centers in the scheme, providing for the treatment of 254,000 ailments annually, including 120,000 dentally treated. School camps, open-air education, convalescent treatment, sight-saving classes (increased from five in 1914 to twenty-six in 1925), and a great campaign against uncleanliness are some of the many achievements. The worst forms of dirt infestation have practically disappeared. Defective teeth, from which 80 per cent of pupil teachers were found to be suffering in 1898, are no longer a serious difficulty. In 1925 the percentage of scholarship holders found to require dental treatment was only 7 per cent. From 1911 to 1914 the deaths per thousand infant births averaged 108. In 1925 it was 68. Better education and the teaching of the maternity and child welfare centers have led to some improvement in the physical condition of entrant children. Of the whole number of children examined in the various age groups, 12,518, or 6.3 per cent, were found to be undernourished, as compared with 12.8 in 1913. The figures show that with the existing remedial agencies a period of prolonged unemployment "has produced surprisingly little effect on the nutrition of the children."

PARIS

(From Our Regular Correspondent)

Aug. 25, 1926.

Films of an Educational Character

A great effort is being made at present by the leagues of social hygiene to promote the use of films for general publicity purposes, an excellent method, which is not sufficiently applied in France. Motion pictures have had a great influence in developing a taste for adventure among juveniles. Many young bandits learned their first lessons in banditry in the "movies," as they themselves have frequently admitted when brought before the judges. We ought, therefore, to use the film, which is sometimes the teacher of evil, for the teaching of the good. The League of Social Hygiene has prepared several instructive films to be used for the dissemination of ideas on public health, which it offers gratuitously, or at very low prices, to the motion picture theaters. The league hopes to secure the passage of legislation which will require the presentation of one of these films during the course of all motion pictures consisting of several parts. There are some very fine films among the number, great intelligence having been shown in their preparation. They are calculated to enliven certain pictures that stir the imagination of the masses. The effects of alcoholism, the campaign against tuberculosis, the hygienic care of the home, and first aid to resuscitate the apparently drowned or asphyxiated have been depicted in excellent pictures. One of the most interesting of the pictures bears the title "The Future Mother," and is the product of the genius of Dr. Devraigne, obstetrician at the Hôpital Lariboisière in Paris. It presents in detail all the principles of child training, from the first dressing of the infant at birth down through the various periods in a child's development, with the calculation of progressive diets and the prophylaxis of all the more frequent diseases of childhood. This film was first presented before the Academy of Medicine, where it met with high approval, and it scores no less success every evening when displayed before large theater crowds. These are some of the beginnings of a new art, which promises to have excellent social results. France is behind America in this field. During the war, American missions passed through the country projecting films of this kind in all the towns and villages, and their example was very useful in making understood here the value of this mode of publicity campaign. But it is an art which has laws of its own, and which must be studied. Some producers of educational films, the better to hold the attention of the public, which is inclined to assume a childish mind before the screen, have endeavored to mix humor with their representations and have not always avoided bad taste. Other films, especially those that deal with the question of depopulation, or race suicide, make an improper

use of statistics by projecting long columns of figures on the screen, which the public has not the time to read and which are not as startling as is imagined. Graphic methods, which popular statisticians are so prone to adopt, are better adapted to printed books than to screen productions. While this mode of comparison requires only a weak effort of the imagination, it is, nevertheless, too much to expect of the average frequenter of motion picture theaters, who seeks only visual sensations presented rapidly and requiring no reflection. Dramatized stories showing hygiene in action, the characters of which represent those who observe the rules of hygiene and those who do not observe them, appeal more to the imagination of the audience and exert a more durable effect. In the film of Dr. Devraigne "The Future Mother," the author has prepared a scenario in which young Margaret, who has taken a course in child care, is represented as contending with old Mag, who personifies old customs and traditions. As the scenes from the life of the people are well depicted and the whole play is enlivened by a touch of healthy humor, the effect produced is excellent.

If this mode of representation is to secure good results, good judgment must be shown in adapting the material to the surroundings and to the purpose in view. The mere projection of figures from a scientific treatise, as has often been done, has never had much effect on the motion picture theater audience.

The Centenary of Laënnec

Laënnec, one of the founders of modern medicine and the discoverer of mediate auscultation, died, Aug. 13, 1826. The centenary anniversary of his death has been honored by a scientific festival, which was divided into two events, one of which has already taken place at Kerlouarnec in Brittany, where Laënnec died, and the other is to be held at Paris, where he was a professor at the Faculty of Medicine. The latter event has been postponed until next December, since the month of August, the vacation period, is not favorable for a meeting of scientists of all countries such as is contemplated, and would not be favorable even for a gathering of French savants, since so many have left the city on journeys in all directions.

The ceremonies in Brittany, though not of an imposing character, were nevertheless impressive. They were held in the home of the Laënnec family, in which Dr. Laënnec died, and in the little cemetery at Plouaré, where he was buried. The tomb is a massive and severely plain mausoleum, which bears the following inscription: "Here lies the body of René Théophile Hyacinthe Laënnec, physician to the Duchess of Berry, lecturer and professor of medicine at the Collège de France, clinical professor at the Paris Faculty of Medicine and at the Royal Academy of Medicine, and knight of the Legion of Honor; born at Quimper, Feb. 17, 1781; died at Kerlouarnec, August 13, 1826."

The ceremonies included several addresses; among others, those of Dr. Lagriffe, president of the Laënnec Society of Quimper; Dr. Mevel, who described in Laënnec the Breton whose qualities of character were those of his native soil; Dr. Laignel-Lavastine, president of the Société française de l'histoire de la médecine and agrégé professor of the Faculty of Medicine of Paris; Professor Chauffard, representative of the Academy of Medicine; Dr. Follet, director of the school of medicine at Reims, the center of medical instruction in Brittany, and, finally, the mayor of Plouaré. It was mainly a gathering of the home folks, the scientific glorification of the work of Laënnec being reserved for the celebration to be held in Paris in December. The addresses brought out the intimate character of the man, who, although the recipient of many honors, remained simple in his manners and continued to show the same kindly spirit toward his more humble fellow citizens, notwithstanding the fact that he assumed a cold and almost stern demeanor when at court or among high state officials. When attacked by tuberculosis, he returned to his native heath, where he found also his last resting place.

The Demolition of Insanitary Centers in Paris

The municipal council of Paris has decided to follow the example of London and to order the destruction of groups of old houses, which form, often in the vicinity of good sections, such insanitary spots that disinfection is possible only by means of fire. In 1905, the Conseil d'hygiène et de salubrité had discovered six sections of this kind in the city, in which mortality from contagious diseases, and especially from tuberculosis, reached high figures. In 1919, after the war, a new investigation was made, which added eleven more sections to the previous list. The present condition of municipal finances makes it impossible for the city to condemn at present all the sections found to be insanitary, but the city council has decided to begin operations with the demolition of some of the worst buildings in the section between Boulevard Sébastopol, rue de Réaumur and rue de Rivoli, in the third and fourth wards.

Investigations and attempts at disinfection during the past fifteen years have proved that they cannot be rendered sanitary. Their insanitary condition has resulted from the narrowness of the streets and from the absence and insufficiency of interior courts, as a result of which most of the apartments get little or no sunlight. The only way to remedy such a situation is to demolish the infected houses, widen the streets, and build sanitary apartments with ample provision for the entrance of sunlight and air. The section concerned comprises 347 houses, in which 12,653 persons reside, and from 1894 to 1919 the average number of deaths from pulmonary tuberculosis in this quarter reached 10.38 per thousand inhabitants, which is almost three times as high as the annual tuberculosis mortality rate for the city of Paris. For the time being, only ninety-one of the worst houses of the quarter, from the standpoint of tuberculosis mortality, have been condemned. These houses, many of which represent some of the last vestiges of the homes of the Middle Ages, are located in rues de Venise, Simon-le-Franc and Brisemiche.

First Aid in Theaters

The prefect of police in Paris is preparing an ordinance pertaining to the regulation of the medical service in theaters and concert halls. The present regulations require the presence of a physician for the duration of the performance as a protection against accidents among the spectators or the personnel of the stage: actors, dancers, machinists and others. Such accidents are rare, but they may be serious. Unfortunately, the presence of a physician is, for the most part, the only precaution taken. When an accident occurs, the physician has, as a rule, no definite course open to him. Only the Opéra, the Opéra-comique, the Comédie française and the Odéon, official theaters receiving subsidies from the government, have a small room to which the patient may be taken, and where the physician will find a few drugs and a few dressings. In the other theaters, even the most luxurious, there is nothing similar, and medical care is given in the office of the manager, where one finds sometimes a small cabinet and a few empty or half-empty bottles. The only effective aid consists therefore in calling a taxi and sending the patient home, after stopping at a pharmacy. There is in Paris a union of theater physicians, which has protested for a long time against this state of affairs and which has finally succeeded in getting the attention of the municipal council. At the request of that body, the prefect of police, who has general supervision over the theaters, has decided, after discussing the matter with the union of theater physicans, that

every theater must have a special room for the care of patients in case of sudden illness or accident occurring during the performance. The room must be provided with such material and equipment as are needed to give first aid to patients.

Activation of the Potency of Insulin and the Treatment of Diabetes

M. Gabriel Bertrand, professor at the Sorbonne and at the Pasteur Institute, has shown in a communication presented to the Academy of Sciences that the potency of insulin for the elimination of glucose in the blood is considerably increased when the reaction takes place in the presence of infinitesimal amounts of nickel and cobalt. He has shown also the presence of these two metals in a normal state in the tissues of the pancreas. By previous studies on ferments he had been able to demonstrate the important rôle of accessory metals in the action of a principal metal on the organism—manganese in exceedingly small doses activating, for example, the effects of iron, and fluorine being necessary for the prompt metabolism of calcium. The action of these metals, in infinitesimal doses, as stimulants of the internal secretions, and possibly even being a necessary condition on which their potency depends, seems to have opened a new chapter of physiology and therapeutics. Homeopathists especially are following these researches with the greatest interest. In any event, recent experiments of Gabriel Bertrand and M. Machebeuf, and of Professor Rathéry and Mlle. Levina, have served to establish that the salts of nickel and cobalt, injected subcutaneously or ingested by mouth in minimal doses, will diminish, to a considerable degree, glycemia and glycosuria in patients with diabetes and will increase their tolerance for carbohydrates. In some cases, by such treatment alone, it has been possible to bring about a total disappearance of sugar—at least, temporarily, as after the administration of insulin. It would seem that this fact can be explained only by the stimulation produced by these two metals on the potency of insulin supplied by the patient's own pancreas. Future experiments will show whether these metals will take the place of insulin, the management and dosage of which always remain a difficult matter.

ITALY

(From Our Regular Correspondent)

July 31, 1926.

The Italian Congress of Internal Medicine and Surgery

The thirty-second congress of the Società italiana di medicina interna will be held in Padua in October. The three chief topics on the program are: (1) the surgical treatment of pulmonary tuberculosis, in which the Società di chirurgia will participate, by Prof. Francesco Gaddi and Prof. Nicola Leotta; (2) angina pectoris, by Prof. Pietro Castellino and Prof. Tomaso Pontano, and (3) biologic reactions in clinical diagnosis, by Prof. Giorgio Cevolotto.

At the same time, the Società italiana di chirurgia will hold its thirty-fourth congress in Padua, the main subjects up for discussion being: (1) the surgery of the visceral sympathetic, by Prof. M. Donati of Padua, and (2) the surgical treatment of pulmonary tuberculosis, in which the Società di medicina will collaborate, by Prof. N. Leotta.

Medical Publicity

At a recent meeting in Rome of the federation of Italian medical societies, a resolution was passed that all publicity that concerns the public health must be first visaed by the president of the medical society of the respective province. According to the resolution, professional men may publish in medical directories or in journals merely their names and addresses, their specialties and their titles. Resolutions have been passed also by other societies, urging the national government to control medical publicity.

A National Federation of Private Therapeutic Institutes

A national federation of private therapeutic institutes was recently established in Rome. The federation set forth, as among its most important purposes, to promote the technical and economic improvement of the federated institutes; to collect useful data; to assist the federated administrations in their relations with local and central authorities, with the industries from which they secure their supplies, and with their own personnel. Many institutes have become members of the federation.

Rice Culture in Relation to Malaria

In the report of the commission appointed to study malaria in relation to the agricultural regions of Italy, Professor Giardino points out that malaria, already widely disseminated throughout the Po valley, has been decreasing in recent years, particularly in the rice-producing areas. The decrease is due to complex factors, among which are the diffusion of a knowledge of hygiene and improved sanitary aid. The rice fields, however, constitute an excellent environment for the development of *Anopheles*, but the present type of *Anopheles* is less productive of malaria. In the report, Professor Alessandrini's explanation of this is that the water in the rice fields is highly oxygenated and contains a rich flora of green algae, which two factors promote better respiration and better nutrition for the larvae than was possible in the swamps that the rice fields replaced. From these stronger larvae develop mosquitoes with greater resistance, which are able to destroy the malaria parasite if it gains entrance to their digestive tract.

The Crusade Against Social Diseases Among Juveniles

The minister of the interior (the general administration of public health) has called the attention of the prefects of the realm to the need of hygienic administration of all educational institutions. This should be accomplished by means of periodic visits by the physicians of the communes to all the public and private schools. The physicians should prepare the health record of each child from year to year and should be aided by the society called Assistenti sanitarie scolastiche, the activities of which should include visits to the homes of the families of the pupils and students. Also the society of Patronati scolastici should be of aid. Encouragement should be extended to the establishment of open-air schools and summer vacation colonies. Every institution should wage a campaign against social diseases. This type of work should be carried on also in regions in which malaria is prevalent.

Special Honors Conferred on Dr. A. Bertarelli

The Consiglio degli instituti ospedalieri of Milan bestowed special honors recently on Dr. Ambrogio Bertarelli, director of the Ospedale Maggiore. Professor Papini, director of the Clinica Dermosifilopatica of the University of Milan, gave the assembled gathering an account of the career of Bertarelli, who has contributed so greatly to the progress of dermatology in Milan. He furnished the impetus that led to the creation of the photoradiotherapeutic department in the Ospedale Maggiore. Two gold medals of merit were conferred on him.

Visit of American Physicians in Florence

Proceeding from Rome, the Postgraduate Assembly of Physicians of North America and the Postgraduate Interstate Association spent a few days in Florence, where they were received in the Great Hall of the university. The guests then visited the various clinics. During the visit at the Clinica Chirurgica, Professor Burci explained briefly operative meth-

ods adopted by him and his school, which present a certain degree of originality and initiative. Professor Comolli, assistant in the Clinica Chirurgica, gave an exposition of his own operative methods.

Two large groups of American roentgenologists and dermatologists visited the Clinica Dermosifilopatica and the annexed Istituto Fototerapico.

The American physicians visited lastly the Istituto di Patologia Generale, where studies on cancer were in progress, and the Careggi tuberculosis sanatorium, which is administered by the Ospedali riuniti of Florence.

VIENNA

(From Our Regular Correspondent)

Aug. 14, 1926.

The Increase of Trichinosis

The ministry of health has called attention to the fact that whereas, in 1925, only seven cases of trichinosis were reported in Austria, four of which proved fatal, during the first half of 1926 eleven cases were recorded, with one death. The cause is supposed to lie in increased imports of pork from infected and imperfectly controlled regions of the Balkans. Furthermore, in rural sections raw smoked ham is commonly eaten. The attention of rural physicians is called to the likelihood that many cases of trichinosis go unrecognized among the rural population and are treated as rheumatism, gout or influenza—with or without diagnosis.

Modern Surgical Treatment of Pulmonary Tuberculosis

The chief physician of the largest Austrian tuberculosis sanatorium, Dr. Maendl, delivered recently an address on the indications for and methods of surgical treatment of pulmonary tuberculosis. He advised, above all, treatment in tuberculosis sanatoriums. A sufficiently long period of observation should precede treatment by pneumothorax, and the speed of precipitation of erythrocytes should be known for purposes of prognosis and control of the treatment. Only severe, destructive, for the most part unilateral processes, with the patient in good general condition, and still young, without marked hemoptysis, are suitable for pneumothorax treatment. Contraindications are: age of patient above 50, diffuse intestinal tuberculosis, bilateral tuberculosis of the kidney, emphysema of the better lung, and severe organic heart disease, even though compensated. On the other hand, Dr. Maendl does not regard these conditions as contraindications: diabetes, tuberculosis of the larynx, operable tuberculosis of the cecum, unilateral tuberculosis of the kidney, pregnancy or a preceding pleuritis of the side to be operated on. As to technic, he uses always the blunt puncture method and the Salomon cannula. The amount of gas to be injected, the degree of pressure, and the length of the interval, will vary greatly in individual cases, and will be determined by observation of the manometer. In 600 cases of initial pneumothorax he did not observe gas embolism, pleural shock or mediastinal emphysema; nor in the many thousand instances of supplementary infusions. Exudates he treats conservatively; they are often favorable rather than otherwise. That the gas is absorbed more rapidly at the time of menstruation is peculiar. Perforation of the lung is occasionally followed by the appearance of pneumonia. It is sometimes necessary to institute pneumothorax alternately in the lungs but seldom in the two at once. Lasting good results extending over a period of ten years have been observed. Phrenicotomy alone or in combination with pneumothorax (twenty cases) gives good results. In thoracoplasty, he is very cautious as to indications; for instance, large cavities constitute an unfavorable prognosis. However, in twelve such cases he had good results.

The Action of Roentgen Rays on the Brain

At a recent meeting of the Chirurgische Gesellschaft of Vienna, the subject of diagnostic and therapeutic irradiation of the brain was discussed. From the clinic of Professor Eiselsberg, Demel exhibited several young dogs in which, nine months previously, in four sittings, with four-day intervals, the cranium had been irradiated. The animals showed disturbance of growth and of gait and gave evidence of optic nerve atrophy. Histologic preparations from some of the dogs that had been recently killed showed hemiatrophy of the brain. Brunner exhibited his preparations, made four weeks after irradiation, which revealed that the effect of roentgen rays on the ectodermal brain tissue was only slight, whereas the connective tissue of the vessels was much affected, with the result that not only considerable brain tumefaction but also a hydrocephalus had developed. These were the early effects of roentgen rays, whereas Demel's observations showed late effects on the growing brain. Sgalitzer pointed out that the sensitiveness of the various cell groups of the organism to roentgen rays varies greatly. In general, cells are the more sensitive to roentgen rays, the more rapidly the cell division processes are taking place in them. In the adult brain the sensitiveness of the ganglion cells, the glia cells, and the nerve fibers, is much reduced. Therefore, there is no danger of injuring the adult central nervous system by therapeutic doses of roentgen rays. Only the early reaction of radiosensitive tissues (hyperemia and edematous swelling) constitutes something of a menace. Dr. Moszkowitz pointed out that American authors had reported favorable results from heavy roentgen-ray doses in the treatment of tumors of the brain and the spinal column. The brain supports these well because the ganglion cell, having reached the limit of its differentiation, is no longer capable of division and is thus no longer sensitive to roentgen rays. The growing tumor, however, in which cell division is actively taking place, is easily injured by the rays. Dr. Fuchs explained the assumption of ophthalmologists that roentgen rays affect eyes that are in the process of development. He cited a case in which, following irradiation of the uterus during pregnancy, bilateral microphthalmus with coloboma of the choroid and coloboma of an optic nerve developed in the child. In the irradiated dogs that were exhibited he found changes of the retina, which resembled similar malformations in man.

Increase of Mosquitoes in Vienna

The floods that have swept over large areas of this country during the last ten weeks have brought a plague of mosquitoes (including *Anopheles*) in many districts. Vienna, especially, is suffering since floods have invaded the numerous parks and wooded regions along the Danube. For a long time there has been an ineradicable focus of malaria in Vienna. There is therefore some danger of an increase of malaria. The city of Vienna is endeavoring to destroy the breeding places of the pest.

Prize Offered for Best Researches on the Physiology and Pathology of High Plateau Regions

The town council of Semmering has offered a prize of $200 for the best article or monograph that has appeared, during the previous two years, on the effects on man of the climate of high plateau regions. The prize will be awarded by the department of natural sciences, of the Academy of Sciences, in Vienna. The decision will be made in January, 1927. The contest is open to foreigners, but the researches, which must be submitted by Dec. 31, 1926, must be carried out in Austria. The purpose of the contest is to determine what are the active factors of a sojourn in a region about 1,000 meters above sea level, for the outstanding favorable results in exophthalmic goiter, neurasthenia, diseases of the respira-

tory tract, and anemia, that are secured in Semmering, have not as yet been satisfactorily explained from the theoretical point of view.

BERLIN

(From Our Regular Correspondent)

Aug. 21, 1926.

The Expenditure of Energy in Musicians

Under the direction of Prof. A. Loewy of Davos and H. von Schroetter of Vienna, as reported in the *Klinische Wochenschrift*, air-tight masks and rubber hoods were applied to the heads of members of the Davos orchestra and to a number of singers, both men and women. Thus, by means of gas meters, the amount of energy expended in singing and in playing various instruments was measured. The results show that the expenditure of energy in whistling, speaking and singing, and, strange to say, in the playing of brass instruments is comparatively slight. Pianists and players of stringed instruments consume much more energy. The amount of energy expended by the director of the orchestra appears to be exceedingly slight.

Care of Tuberculous Children

At a recent session of the federal council on public health (a body of experts appointed to advise the federal public health service, or *Reichsgesundheitsamt*), the need was recognized of modifying the system of sending tuberculous or menaced children to institutions. Abuses have existed in (1) the selection of children, and (2) the character of the institutions. Children should be selected solely on the basis of whether or not they need treatment. Recommendations should be made chiefly by physicians. Competent opinion as to proper institutions is available at the public health bureaus and the tuberculosis welfare centers. When these mentioned requirements cannot be met, selection of children must be left to a central observation station (a hospital or sanatorium). When previous observation has been inadequate, the sanatorium must decide whether or not the child shall remain and what his treatment should be. All agencies shall cooperate to prevent children from being sent to inappropriate institutions. Children clinically healthy, irrespective of whether or not they are infected with tuberculosis, are not to be sent to institutions. Distinction should be made between measures to strengthen children and therapeutic procedures under medical direction. Recuperative measures should be applied to children who are infected and are physically weak but do not present pronounced tuberculous symptoms. Ordinarily, children should not be sent to recuperative centers for less than six weeks. Children in need of therapeutic care must never be sent to recuperative centers where they may infect others. For strong children with inactive tuberculosis, ambulant treatment should be employed. Only children with active tuberculosis require therapeutic procedures. A sojourn for climatic benefits or recuperation is without value unless extended over at least three months. In cases of tuberculosis of the bones and joints, prompt action may be necessary to prevent crippling of the child. Warning was given against indiscriminate use of tuberculin, and the use of tuberculin was discussed.

TUBERCULIN AS AN AID IN DIAGNOSIS

In the ointment reaction of Moro, a portion of tuberculin ointment about the size of a pea is rubbed with the finger into the skin of the chest. (Preparation of a tuberculin ointment that has uniform action is difficult.) Ether rubbed into the skin before the tuberculin ointment is applied increases the capacity of the skin to react. If the reaction is positive, extremely small nodules develop within forty-eight hours (the number varying directly with the degree of reaction), which are surrounded by a more or less extensive reddening of the skin. If the reaction is doubtful or negative, the test is repeated in two days. If again negative, the cutaneous test (Pirquet's reaction) is instituted with undiluted old tuberculin on the inner aspect of the forearm. By this graded testing an existing sensitiveness to tuberculin will be increased to such an extent that a negative result in the third test will exclude tuberculosis with reasonable certainty. However, if still greater certainty is desired, the intracutaneous test may be employed, for which one injects 0.1 cc. of a 1:1,000 old tuberculin solution into the uppermost layer of a raised fold of skin. It is not advisable to apply the intracutaneous test unless it is preceded by the cutaneous test.

TUBERCULIN TREATMENT

In applying tuberculin as treatment, it must be recognized that the significance of changes in the organism brought about by tuberculin with reference to the course of tuberculosis in children is still uncertain. Tuberculin treatment should be applied only after careful consideration of the clinical condition of the patient. To prescribe tuberculin treatment solely on the basis of positive reactions (especially after examining large groups) is not indicated. All methods of prophylactic application of tuberculin are still in the experimental stage. The relative tolerance of children for tuberculin must not lead to premature conclusions. Articles on the uses and the application of tuberculin should contain exact information in regard to case histories and results.

The communication which Professor Bier, the director of the university surgical clinic, sent in to be read at the session of the federal council is of considerable interest in this connection: "Tuberculosis sanatoriums in Germany may be as successful as those in high plateau regions, or in southern Europe, or anywhere else. Owing to finances, comparatively few tuberculous persons can take advantage of foreign sanatoriums. The number of tuberculous persons in Germany is so great that the question of erecting a sanatorium in a foreign country is of little importance to the general public health. Ambulatoriums for tuberculous patients of the type established in the university surgical clinic, which has been in operation since 1920 and which has achieved success, are more practical than sanatoriums. Here tuberculous children stay only during the day and are given sun and light treatment, physical exercises and suitable food. The children are kept busy all day, and the baneful effects of idleness, commonly noted in the sanatoriums, are avoided. The children are able to keep abreast of their classes in school, although they receive instruction only for a period of four hours, three days a week. In the open air and under the influence of suitable exercise, they learn, in spite of their illness, much better and much more rapidly than in the close school rooms. The children are not withdrawn from the family, and such arrangements and equipment cost only a fraction of what the sanatoriums cost, so that, with the means at our disposal, much more can be accomplished."

Marriages

JOSEPH E. NOWREY, JR., to Miss Edith Ann Novella Davis, both of Camden, N. J., at New York, August 18.

BERNARD J. LACHNER to Miss Anne L. Canty, both of Rock Island, Ill., at East Moline, August 21.

MILTON MADISON WELLS, Fairland, Ind., to Miss Dora Hazelrigg of Adams, June 30.

ARTHUR F. HAAG, Chicago, to Miss Lucille Isabelle Beggs of Hudson, Wis., August 21.

EDWARD JULIUS STIEGLITZ to Miss Lillian Peterson, both of Chicago, September 2.

Deaths

Samuel Hendricks Rosenthal, Rochester, N. Y.; University of Pennsylvania School of Medicine, Philadelphia, 1900; member of the Medical Society of the State of New York; formerly on the staff of the Park Avenue Hospital; served during the World War; aged 47; died, August 25, at the Mount Sinai Hospital, following an operation.

Eric Ericsen Sattler ✠ Cincinnati; Miami Medical College, Cincinnati, 1882; formerly on the faculty of his alma mater; at one time on the staff of the Cincinnati General Hospital; delegate to the International Medical Congress, Berlin, 1890; author of "History of Tuberculosis," 1883; aged 66; died, July 25, following a long illness.

Charles E. Walton, Cincinnati; Pulte Medical College, Cincinnati, 1874; formerly dean, registrar and professor of operative and clinical surgery and gynecology at his alma mater, and associate professor of gynecology, Cleveland-Pulte Medical College; on the staff of the Bethesda Hospital, where he died in August; aged 77.

Thomas Davis Merrigan ✠ New York; Medical Department of the University of the City of New York, 1887; formerly emeritus professor of anatomy, Fordham University School of Medicine, New York; aged 61; died, August 1, at the Rockaway Beach (N. Y.) Hospital, of pneumonia following influenza.

Joseph Schoolfield Jones, Galveston, Texas; University of Texas Department of Medicine, Galveston, 1902; member of the State Medical Association of Texas; county health officer; served during the World War; aged 46; died, August 20, at St. Mary's Infirmary.

Armin Fischer, Newark, N. J.; University of Budapest, 1882; member of the Medical Society of New Jersey; formerly state health commissioner; at one time on the staff of the Newark Beth Israel Hospital; aged 70; died, August 22, of cerebral hemorrhage.

George Holcomb Barber ✠ Medical Director, Rear Admiral, U. S. Navy, San Francisco; Medical Department of Columbia College, New York, 1888; appointed assistant surgeon, in 1889, and rear admiral in 1917; aged 61; died, August 23.

F. S. Packard, Norlina, N. C.; Medical School of Maine, Portland, 1887; member of the Medical Society of the State of North Carolina; aged 65; died, August 10, at the Johns Hopkins Hospital, Baltimore, following an operation.

Robert Emmet Ledbetter ✠ Medical Inspector, Commander, U. S. Navy, retired, Annapolis, Md.; University of Pennsylvania School of Medicine, Philadelphia, 1899; was commissioned in the Navy in 1900; aged 49; died, May 4.

James Hamilton Todd, Oakland, Calif.; Cooper Medical College, San Francisco, 1883; member of the California Medical Association; aged 80; died, June 23, at Piedmont, of arteriosclerosis and chronic interstitial nephritis.

Robert L. Armistead, Jefferson, Texas; University of Georgia Medical Department, Augusta, 1886; member of the State Medical Association of Texas; aged 66; died, July 3, at the Kahn Hospital, Marshall, of pneumonia.

John Bernard Halligan, North Emporia, Va.; Medical College of Virginia, Richmond, 1898; member of the Medical Society of the State of Virginia; served during the World War; aged 48; died, August 15, at Petersburg.

Alvin Lucien Light ✠ Dayton, Ohio; Miami Medical College, Cincinnati, 1900; formerly health officer of Dayton; at one time on the staff of St. Elizabeth's Hospital; aged 53; died, August 21, of heart disease.

Benjamin D. Woodson, Poteau, Okla.; Memphis Hospital Medical College, 1890; member of the Oklahoma State Medical Association; aged 58; died recently, at a Forth Smith (Ark.) Hospital, of appendicitis.

Ernest Asa French, Plainview, Minn.; University of Minnesota Medical School, Minneapolis, 1903; member of the Minnesota State Medical Association; aged 48; died, August 17, of appendicitis.

John Herbert Franklin ✠ Springvalley, Ill.; Rush Medical College, Chicago, 1892; member of the Western Surgical Association; on the staff of St. Margaret's Hospital; aged 58; died suddenly, August 27.

C. Vernon Fisher, Orange City, Iowa; State University of Iowa College of Medicine, Iowa City, 1919; member of the Iowa State Medical Society; aged 31; died, July 5, of pulmonary tuberculosis.

George Martin, Conemaugh, Pa.; Jefferson Medical College of Philadelphia, 1885; member of the Medical Society of the State of Pennsylvania; aged 67; died, August 13, of arteriosclerosis and nephritis.

Charles Joseph Hahn, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1900; member of the city board of health; aged 60; died, August 23, of chronic nephritis.

William Cloyd Jasper, Waynesburg, Ky.; Medical College of Ohio, Cincinnati, 1889; aged 64; was killed, August 23, when the automobile in which he was driving was struck by a train.

Arthur Fitts Wheat ✠ Manchester, N. H.; Medical School of Harvard University, Boston, 1893; member of the Radiological Society of North America; aged 55; died, August 11.

Dennis George Callahan, Brooklyn; Long Island College Hospital, Brooklyn, 1903; member of the Medical Society of the State of New York; aged 52; died, August 8.

Milton Henry DeMand ✠ Haven, Kan.; University of Kansas School of Medicine, Rosedale, 1912; aged 42; died, July 29, at a hospital in Wichita, of pneumonia.

Noah D. Myers, Decatur, Ill.; Medical College of Ohio, Cincinnati, 1872; member of the Illinois State Medical Society; aged 83; died, August 5, of senility.

Thomas Bryan Hall, Marshall, Mo.; Missouri Medical College, St. Louis, 1881; member of the Missouri State Medical Association; aged 68; died, August 4.

William Ellsworth Corbin, Washington, D. C.; Howard University School of Medicine, Washington, 1888; aged 64; died, August 12, of cerebral hemorrhage.

Johnson Armstrong, Tacoma, Wash.; Rush Medical College, Chicago, 1880; member of the Washington State Medical Association; aged 74; died, August 11.

Milford D. Brooks, Kansas City, Mo.; Meharry Medical College, Nashville, 1918; aged 32; died, August 18, at the Wheatley Hospital, of appendicitis.

Dennis G. Graham, Leslie, Mo.; University College of Medicine, Richmond, 1900; also a druggist; aged 58; died, August 19, at Schenectady, N. Y.

Alfred Henry Quessy ✠ Fitchburg, Mass.; College of Physicians and Surgeons, Baltimore, 1902; aged 50; died, August 26, at the Carney Hospital, Boston.

George J. Fanning, Portland, Ore.; Willamette University Medical Department, Salem, 1891; aged 57; died, June 29, of a self-inflicted bullet wound.

Wilbur Fiske Hanson, Los Angeles; Rush Medical College, Chicago, 1885; aged 81; died, August 2, of injuries received in an automobile accident.

Ellietson H. Rogers ✠ Stevens Point, Wis.; Eclectic Medical Institute, Cincinnati, 1889; aged 60; was killed, August 30, in an automobile accident.

Cincinnati Lafayette McCallum, Mason, Texas; Kentucky School of Medicine, Louisville, 1888; aged 63; died, June 27, of chronic myocarditis.

William H. Faulkner, Walden, N. Y.; New York Homeopathic Medical College, 1881; aged 65; died, March 6, of cerebral hemorrhage.

Alexander Hamilton Clements, Brooklyn; Long Island College Hospital, Brooklyn, 1896; aged 59; died recently, at London, England.

David Edwin Fitzgerald, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1894; aged 78; died, August 16.

John Samuel Forsen ✠ St. Joseph, Mo.; Ensworth Medical College, St. Joseph, 1910; aged 41; died, August 14, at St. Louis.

Max Carl Groppner, Boston (licensed, Massachusetts, 1900); aged 65; died suddenly, August 7, of organic heart disease.

Henry W. Wilcox, Jr., Deposit, N. Y.; Baltimore Medical College, 1891; aged 57; died, August 7, of carcinoma of the throat.

William Francisco Lee, Humboldt, Kan.; College of Physicians and Surgeons, Keokuk, 1875; aged 76; died recently.

Emma L. Boice Hays, Toledo, Ohio; Cleveland University of Medicine and Surgery, 1882; aged 68; died, August 23.

Josiah Young, Monowi, Neb.; Eclectic Medical Institute, Cincinnati, 1881; aged 75; died, July 11, of heart disease.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

K-17 OR RATTLESNAKE OIL

Another Fraudulent Deafness Cure Debarred from the Mails

Readers of this department of THE JOURNAL will remember that, in the issue of February 27, 1926, there was discussed the action of the federal authorities against a syndicate of frauds run by three men, Ward H. Webb, W. W. Burgess, and Linn D. Johnson, all of Kansas City, Mo.

One of the numerous frauds exploited by this group went by the trade name of the "Dale Laboratories." The product sold was known as "Virex," an alleged cure for deafness. It consisted essentially of a mixture containing oils of wintergreen, eucalyptus, camphor, mustard and neatsfoot with

Why Not be Permanently Rid of the Terrible Affliction of Deafness
Without Further Delay?
Enjoy Life to the Fullest Measure!
You have made a good beginning But it takes a little persistence Surely it is worth the necessary effort. Think what it means to be able to HEAR again—to be one of the crowd—to enjoy all the pleasures that are now denied you'
We do not make any false promises about what K-17 Compound will do for you. It has proven its marvelous power in thousands of cases all over the country It has proved that it is the one reliable home remedy for Catarrh and Catarrhal Deafness.
No matter how bad you case may be, the good results are bound to come if you use K-17 Compound a reasonable length of time The worse your case is, the more important it is that you should carry on to full success NOW Just imagine the condition of the air chambers in your ears—stopped up, clogged up, and inflamed with mucus and impurities! Such a condition is dangerous to life itself, due to the close proximity of the inner ear to the brain!
Clean out the mucus—clear out the impurities—before it is too late. Think how easy it is. Merely rub K-17 Compound around and under the ear, and inhale the healing purifying and penetrating vapors
Don't Do This
No surgical operations, no bothersome ear plugs to wear, no big doctor bills to pay! All that is required is a few minutes of your time each day by this simple, pleasant and inexpensive method. And, bear in mind, the good results are sure to come if you use this wonderful treatment a reasonable length of time
Keep K-17 on Hand always for These Ailments
FOR INFLUENZA (FLU), LA GRIPPE AND SEVERE COLDS
Every home should have K-17 Compound available for immediate use in these cases. Delay may mean disaster It is far better to be safe
FOR RHEUMATISM, LUMBAGO, PARTIAL PARALYSIS, SCIATICA, LAME BACK, STIFF JOINTS, PLEURISY, SORE AND SWOLLEN JOINTS AND MUSCLES, AND PAINS AND ACHES OF ALL KINDS
No matter where the pain or congestion may be, the results from the use of K-17 Compound are swift and sure Use K-17 Compound first and other treatments are usually unnecessary In case of pneumonia, by all means get a doctor, but use K-17 Compound FIRST
FOR ASTHMA, CATARRH, HAY FEVER AND BRONCHITIS
Nothing is quite so good for these diseases. The results from K-17 Compound are almost magical—in fact, so wonderful that thousands say they received almost instant relief when everything else failed
FOR HEADACHE, NEURALGIA, TONSILITIS AND SORE THROAT
Many a doctor bill can be saved by applying K-17 Compound to the affected parts, and inhaling the vapors. Wonderful relief comes almost instantly in most cases
REMEMBER: K-17 is the original remedy, "Formerly known as Rattle Snake Oil," "The Family Doctor in the Home"
The Greene Laboratories, Lock Drawer 76, Kansas City, Kansas

benzol. It was brought out in THE JOURNAL article that Virex was first known as "Rattlesnake Oil" and later as "K-17" and had been exploited by a mail-order quack, one Cooley H. Greene. Greene, it seems, placed his advertising through an agency that was operated by the same quacks that conducted the Dale Laboratories. Getting behind in his payments, the Burgess-Johnson-Webb trio entered into an arrangement with Greene whereby they should put out a similar product under the name Virex. This they did, appropriating the testimonials that Greene had accumulated for K-17 and Rattlesnake Oil. On February 11, 1926, the Postmaster General issued a fraud order against the Dale Laboratories, and Kansas City papers of April 29, 1926, reported that the federal grand jury had returned indictments against Burgess, Johnson and Webb.

Now the government has acted in the case of the original fraud that was exploited by Cooley H. Greene under the trade name "Greene Laboratories."

The government's case, brought out in the memorandum of the solicitor of the Post Office Department in his recommendation to the Postmaster General that a fraud order be issued, divulges few facts that the readers of THE JOURNAL are not already familiar with. The memorandum states that the Greene Laboratories (which were not laboratories at all) was a trade name adopted by Cooley H. Greene and his wife Rebecca, and the business consisted in the advertising and sale through the mails of an alleged cure for deafness called K-17, formerly known as Rattlesnake Oil. The stuff was manufactured by George A. Breon of Kansas City. This, presumably, is the same George A. Breon that comes to the medical profession in the guise of a manufacturer of alleged reputable pharmaceutical products. Breon's connection with other mail-order medical frauds has been brought out at different times.

The evidence showed that Greene filled about one hundred orders a day and his gross receipts from this fraud were between $75,000 and $100,000 annually. Greene had no medical training. He had formerly peddled his remedy about the country and when engaged in that business made use of snakes and snake skins to attract purchasers. This was at the time he was calling his humbug Rattlesnake Oil, although, of course, it never contained any oil of snakes; not that it would have had any special virtue had it done so.

The solicitor's memorandum states that the usual follow-up procedure on Greene's part was to state in the original letter that the price was $5 for a treatment, coming down by easy stages until he reached $2.50.

On April 3, 1926, a fraud order was issued debarring from the use of the mails the Greene Laboratories and C. H. Greene.

Correspondence

BENIGN OR NONMALIGNANT TUMORS

To the Editor:—It is time to discard the old fashioned and misleading terms of benign or benignant in speaking of neoplasms. The word nonmalignant or, possibly, innocent could well be substituted.

An abnormal growth may be *innocent* or *nonmalignant* at a certain stage of its presence; but it is the modern tendency to regard all new growths as possibly malignant until they have been removed and histologically proved otherwise.

In any case, an expression describing a morbid condition as "of good influence" should not be permitted in scientific English. HOWARD LILIENTHAL, M.D., New York.

ELEVATORS FOR CHILDREN'S SCHOOLS

To the Editor:—Of all the public buildings in New York, the public elementary schools as well as high schools are being constructed still without any elevator facilities for the children. Some of these buildings are four and five stories high, necessitating the climbing of stairs, which is harmful even for the normal children and certainly for those with potential or certain cardiac defects, as well as for those who suffer from anemia, malnutrition, and the like.

I have written recently to the superintendent of schools and he replied that it was a surprise to him that any physician would suddenly begin to consider this aspect of the situation when for years doctors did not object to children climbing stairs.

It is my conviction that stress and strain involve effects on the heart and arteries the full measure of which we have not yet apprehended. It is certain that in adults coronary changes and arteriosclerosis are consequent effects. In children, a large number become dyspneic after climbing stairs, and eventually a semester at school produces untoward effects.

I have endeavored to proclaim the need of elevators for children in the public schools, but unless some concerted medical interest is lent to the subject, the situation will be ignored by politicians who are not acquainted with the full importance of the matter.

MORRIS H. KAHN, M.D., New York.

SMALLPOX IN UTERO

To the Editor:—Mrs. W., aged 26, a quintipara, had typical smallpox, having been vaccinated six days before with success, taking at the time she had the smallpox. Seven days after the pustule stage and before she had thoroughly shed all the scabs, I delivered her of a normal baby boy weighing 7½ pounds (3.4 Kg.). The baby had a well developed case of smallpox with a very few pocks just forming, a few in the pustule stage, and the remainder in the scab stage, which was shed almost entirely within twenty-four hours. Baby and mother recovered nicely with the exception that the baby had one pustule in its eye which completely destroyed it.

LEE O. GREENE, M.D., Pea Ridge, Ark.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

METAL INJECTIONS TO REENFORCE ACTION OF INSULIN

To the Editor:—Is there any literature on treatment with nickel and cobalt, mentioned in the enclosed clipping as a means to reenforce the action of insulin in diabetes?

F. P. SILVERNALE, M.D., Elmore, Minn.

ANSWER.—The press clipping is a cablegram from Paris referring to a communication presented at the Académie des sciences at Paris. The *Presse médicale* of July 21, 1926, p. 916, gives the society proceedings of the Académie at its meetings, June 14 and 28, and states that Drs. G. Bertrand and Mâchebœuf presented a report on research in regard to the presence of minute amounts of nickel and cobalt in the organism of man and animals and especially in the pancreas. They found that the substance extracted from the pancreas and utilized in diabetes—insulin—has a much more potent action in the presence of minute amounts of nickel and cobalt than when it is used alone. They add that we have in this a means to enhance the action of insulin. The society proceedings give no further details except that the research was done on dogs and rabbits.

DOSAGE OF DIRECT AND ALTERNATING CURRENTS

To the Editor:—Please give me, if possible, any accurate information that you may have regarding dangerous dosage of direct and alternating currents. I want this information in order that I may be able to classify men who are working as linesmen, or with electrical equipment.

E. W. DALES, M.D., Grand Rapids, Mich.

ANSWER.—It is no more possible to state definitely the maximum current, either direct or alternating, that may be passed through a human being without danger than it is to state definitely the maximum speed at which an automobile may strike a man without injuring him dangerously.

The maximum, so-called harmless, strength of current depends on the physical condition of the man shocked and also on the path taken by the current through his body. A man with a weak heart cannot stand so great an amperage as can a man with a sound heart; nor can a man stand so great an amperage through his heart or brain as he can, let us say, through two fingers of his hand.

There is a false belief held by many persons, electrical as well as lay, that voltage is that which kills. It is not; it is the current that flows as a result of this electric potential. The current depends not only on the voltage but also on the resistance between the contacts; a voltage of 110 volts, or even less, can send enough current through a man to kill him, if the resistance between the contacts is low enough. Often we hear of people being electrocuted while immersed in their bath. One line of the lighting circuit may become grounded to the socket of the lamp, and when the bather touches the socket to turn on the light, a current passes through him to the ground, the second contact being the water in which he is bathing and which makes an excellent contact.

We would suggest that our correspondent consult some insurance company concerning a classification such as he desires. However, insurance companies group all electrical workers in one class regardless of whether they work with low tension or high tension electricity.

INFANTILE UTERUS—TATTOOING—A. M. A. EMBLEM

To the Editor:—1. A woman, aged 33, married, weighing 185 pounds (84 Kg.), complains of headache. She began to menstruate at 14, and ceased at 18. She has never been pregnant. She has had a thyroidectomy. I have given her ovarian residue now for two weeks with the result that the headaches are less and she has a feeling of weight in the pelvis. What can I reasonably expect in the restoration of the menses? Would there be contraindications to her becoming pregnant, with atrophic or infantile uterus? She desires children. 2. A man with extensive tattooing of nine years' standing came to me recently. On his arm a design in which green pigment had been used has become swollen and painful. Places that had broken down seem to heal after the pigment had been discharged from the ulcers; others are raised and hard, and have the appearance of blisters. What could be the cause of the trouble after so many years with no trouble? What would be a suggestive treatment? 3. I am not as yet a member of the American Medical Association. Could I secure the official A. M. A. auto insignia, radiator style? Please omit my name.

M.D., Washington.

ANSWER.—1. Regarding both amenorrhea and fertility, the outlook for obese patients with gross disturbances in the endocrine system is generally unfavorable. The longer the amenorrhea, the worse the prognosis; hence in the case cited the outlook is bad. If the menses can be restored, the chances for conception are improved. An attempt may be made to bring on menstruation by the administration of thyroid extract or iodine, ovarian and pituitary preparations; but the results are usually not encouraging. More recently, patients with amenorrhea and sterility have been successfully treated for both conditions with repeated, small doses of the roentgen ray. However, this treatment should be carried out only by an experienced roentgenologist.

There are no contraindications to pregnancy in a patient with an infantile uterus. Most patients with infantile uteri are sterile; but one should be cautious about telling a woman she can never have a baby, for even a decidedly undersized uterus may grow and carry a fetus to term.

2. It is impossible to state whether or not the tattooing is directly responsible for the present condition. It might be necessary to consult some one with special knowledge of diseases of the skin.

3. The auto insignia is sold only to members of the American Medical Association.

TEETHING AGE

To the Editor:—My baby is now 14 months old and weighs 10 Kg. Delivery was normal. It is breast-fed, bright and healthy, sleeps well and looks normal, but so far has not cut any teeth. Present feedings include: 9 a. m., milk; 12 (noon), noodle, meat and vegetable soup; 3 p. m., breast feeding and glass of milk; 7 p. m., cereal with an egg yolk; 10 p. m., breast feeding; plenty of orange juice. I have lately prescribed a calcium glycerophosphate preparation. Can you offer any suggestions? Is such delayed teething common? Please omit my name.

M. A., M.D., Valencia, Spain.

ANSWER.—Most babies begin cutting the teeth at about the sixth month. There is, however, a wide variance in respect to time. It is not unusual to find teeth erupting as early as the second month or as late as the twelfth. In the majority of cases, a check up of the family history will disclose an apparent hereditary influence. Early rachitis is usually accompanied by late dentition. In an occasional case the delay in cutting can be accounted for by the inability of the teeth to force their way through what appears to be a thickened gum tissue. In such cases, forceful massage of the gums is helpful, although, in extreme cases, lancing is indicated. The influence of a corrected diet seems to offer no direct benefit other than to the general welfare of the baby. Calcium salts apparently are most helpful (if at all) to dentition when given in organic combinations. No doubt, the baby will soon have teeth.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, Nov. 9-10. Sec., Dr. James W. Walker, Fayetteville.

ARIZONA: Phoenix, Oct. 5. Sec., Dr. W. O. Sweek, Phoenix.

CALIFORNIA: Sacramento, Oct. 18-21. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

COLORADO: Denver, Oct. 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: State Board of Healing Arts, New Haven, Oct. 9. Prerequisite to license examinations. Box 1895, Yale Station, New Haven. Medical Examining Board, Nov. 9-10. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Medical Examining Board, Nov. 9. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Oct. 12. Sec., Dr. Edgar P. Copeland, Suite 110, 1801 Eye Street, Washington.

FLORIDA: Tallahassee, Oct. 12-13. Sec., Dr. William M. Rowlett, Box 603, Tampa.

GEORGIA: Atlanta, Oct. 12-14. Sec., Dr. Luke Robinson, Covington.

HAWAII: Honolulu, Oct. 11-14. Sec., Dr. A. L. Davis, 1254 Emma St., Honolulu.

IDAHO: Boise, Oct. 5. Commissioner of Law Enforcement, Mr. F. A. Jeter, Boise.

ILLINOIS: Chicago, Oct. 5-7. Supt., Regis. and Education, Mr. V. C. Michels, Springfield, Ill.

IOWA: Des Moines, Nov. 16-18. Commissioner, Dept. of Health, Dr. Henry Albert, Des Moines.

KANSAS: Topeka, Oct. 12. Sec., Dr. Albert S. Ross, Sabetha.

MAINE: Portland, Nov. 9-10. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, Nov. 9-11. Sec., Dr. Frank M. Vaughan, Room 144, State House, Boston.

MICHIGAN: Lansing, Oct. 12-14. Sec., Dr. Guy L. Connor, 707 Stroh Bldg., Detroit.

MINNESOTA: Minneapolis, Oct. 5-7. Sec., Dr. A. E. Comstock, 636 Lowry Bldg., St. Paul.

MONTANA: Helena, Oct. 5-7. Sec., Dr. S. A. Cooney, Helena.

NEVADA: Carson City, Nov. 1. Sec., Dr. Simon L. Lee, Carson City.

NEW JERSEY: Trenton, Oct. 19-20. Sec., Dr. Charles B. Kelley, Trenton.

NEW MEXICO: Santa Fe, Oct. 11-12. Sec., Dr. W. T. Joyner, Roswell.

NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 20-23. Chief, Professional Exams. Bureau, Mr. Herbert J. Hamilton, State Education Building, Albany.

RHODE ISLAND: Providence, Oct. 7-8. Sec., Dr. B. U. Richards, Providence.

SOUTH CAROLINA: Columbia, Nov. 9. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

UTAH: Salt Lake City, Oct. 5. Director, Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

WYOMING: Cheyenne, Oct. 4-6. Sec., Dr. G. M. Anderson, Cheyenne.

VACANCIES IN MEDICAL SCHOOLS

At the time we go to press, the medical schools named in the following list report vacancies in the four classes as follows:

Name of School	1st Year	2d Year	3d Year	4th Year
University of Arkansas School of Med...	5	..	10	..
Stanford University School of Med.....	..	5	1	12
University of California Medical School..	..	..	14	9
University of Colorado School of Med...	..	2	10	12
George Washington Univ. Med. School..	..	3	3	..
Emory University School of Medicine....	2	20	..	..
University of Kansas School of Med....	..	..	2	5
Harvard University Medical School.....	..	9	..	..
St. Louis University School of Med.....	..	..	5	..
University of Missouri School of Med..	..	6	..	..
Dartmouth Medical School.....	10	8	..	..
Western Reserve Univ. School of Med..	..	6	..	..
Woman's Med. College of Pennsylvania..	6	6	15	16
University of So. Dakota Sch. of Med..	..	6	..	..
University of Tennessee School of Med..	..	..	6	10

This list should be called to the attention of any properly qualified students who thus far have failed to secure enrolment in some class A medical school. Four separate bulletins containing information in regard to these vacancies have been sent to deans of all medical schools in order that properly qualified students applying to them since their own enrolments have been filled may be directed to these institutions.

Florida June Examination

Dr. William M. Rowlett, secretary of the Florida Board of Medical Examiners, reports the written examination held at St. Petersburg, June 14-15, 1926. The examination covered 10 subjects and included 100 questions. Of the 170 candidates examined, 132 passed and 38 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Yale University School of Medicine		(1921)	77.2
Howard University School of Medicine		(1925), 77.9,	83.5
Atlanta College of Physicians and Surgeons		(1906)	75
Atlanta Medical College		(1896)	78.9
Atlanta School of Medicine		(1910) 81,	(1911) 78.9
Emory University School of Medicine		(1905) 83.3, (1925) (1926) 77, 77, 78.4, 79.8, 80.1, 82.9, 83.5, 84.7, 86.7, 87.6, 88.9	79.9,
University of Georgia Medical Department		(1913)	78.3,
		(1924) 78.5, 89.5, (1925) 75, 75.9, 77.4, (1926) 79.1	
Bennett College of Eclectic Med. and Surg., Chicago		(1906)	83.5
Chicago College of Medicine and Surgery		(1913)	82
Chicago Hospital College of Medicine		(1918)	78.8
Northwestern University Medical School		(1894) 85.9, (1911) (1924) 86	83.7,
Rush Medical College		(1884) 76.7, (1891) 76.3, (1897) (1903) 78.7, (1924) 90.6	78.2,
University of Illinois College of Med.		(1909) 78.5, (1915)	79.4, 81.3
Indiana University School of Medicine		(1925)	81.6
State College of Physicians and Surgeons, Indianapolis		(1907)	75
Hospital College of Medicine, Louisville		(1906)	81.4
University of Louisville School of Med.		(1923) 84.7, (1924)	80
Tulane University of Louisiana School of Medicine		(1915) (1920), 77.1, 79, (1921) 86.4, (1922) 82.8, (1924) 82.9, (1925) 81.4, (1926) 76.8, 83.5, 83.6, 84.8, 87.9	81.5,
Johns Hopkins University Medical Department		(1916) (1918) 83.2, (1919) 82.3, (1920) 80.7, (1926) 86.5	87.1,
University of Maryland School of Medicine		(1891) (1906) 76.8, (1914) 78.2, (1923) 76.3	75,
Harvard University		(1922)	90.6
Tufts College Medical School		(1908)	78.4
University of Michigan Medical School		(1923) 87.5, (1924)	79.7
University of Michigan Homeo. Medical School		(1898)	76.8
Barnes Medical College, St. Louis		(1908)	76.4
St. Louis College of Physicians and Surgs.		(1890) 76.7, (1912)	75
St. Louis University School of Medicine		(1924)	85.2, 86.2
University Medical College of Kansas City		(1906)	76.2
Washington University School of Med.		(1922) 87.1, (1926)	77.6
Albany Medical College		(1908)	81.8
Columbia University College of Physicians and Surgs.		(1908) (1921) 86.6	77.3,
University of Buffalo Department of Med.		(1892) 82, (1923)	84.8
Medical College of North Carolina		(1906)	75,
Eclectic Medical College, Cincinnati		(1923)	77.5, 82.2
University of Cincinnati College of Med.		(1921) 84.6, (1922)	85.3
University of Oklahoma School of Medicine		(1925)	83.9
Hahnemann Medical College and Hosp. of Philadelphia		(1925)	76.1
Jefferson Medical College of Philadelphia.		(1917) 82.2, (1926)	85.1
University of Pennsylvania School of Medicine		(1897) (1904) 78.6, (1921) 75, 83.6, (1924) 87.3	75,
University of Pittsburgh School of Medicine		(1908) (1909) 81.2, (1924) 84.1	85,
Medical College of the State of South Carolina		(1925)	81.9, 83.1,
		(1926) 78.5	
University of Nashville Medical Department		(1906)	75
University of Tennessee College of Medicine		(1907)	75.3
Vanderbilt University School of Medicine		(1919) 85.7, (1920) (1924) 79.5, 87.3, (1925) 85.9, (1926) 77.6, 80.5, 86.6	77.7,
Medical College of Virginia		(1908) 83.8, (1914) 79, (1925) (1926) 85.9	88.1,
University College of Medicine, Richmond		(1907)	75, 75
University of Virginia Department of Medicine		(1902) (1903) 77.3, 80.3, (1924) 84.2	77.6,
McGill University Faculty of Medicine		(1923) 85.5, (1924)	84.1
Queens University Faculty of Medicine.		(1915) 86.4, (1916)	75.3
University of Manitoba Faculty of Med.		(1916) 82.1, (1918)	82.1
University of Brussels, Belgium		(1926)*	83.4

College	FAILED	Year Grad.	Per Cent
Birmingham Medical College		(1914)	63.5
University of Alabama School of Medicine		(1884)	74
Howard University School of Medicine		(1910)	67.4
Atlanta College of Physicians and Surgeons		(1899)	73.5
Atlanta School of Medicine		(1894)	71.5
Emory University School of Medicine		(1911)	72
Hospital Medical College, Eclectic, Atlanta		(1911)	44.9
University of Georgia Medical Dept.		(1924) 74.6, (1925)	73.1
College of Medicine and Surgery, Physio-Med., Chicago		(1902)	55.7
Northwestern University Medical School		(1909)	71
Rush Medical College		(1880)	71.6
Indiana University School of Medicine		(1914)	72.6
Kentucky School of Medicine		(1892)	59.9
College of Physicians and Surgeons, Baltimore		(1892)	66.4
University of Maryland School of Medicine		(1906)	71.5
Boston University College of Medicine		(1912)	73.2
Tufts College Medical School		(1919)	67
St. Louis University School of Medicine		(1906)	71.1
Washington University School of Medicine		(1905)	71.6
Dartmouth Medical School		(1899)	0
Cleveland-Pulte Medical College		(1911)	70.1
Jefferson Medical College of Philadelphia		(1888)	56.3
Medico-Chirurgical College of Philadelphia		(1899)	63.5
University of Pennsylvania School of Medicine		(1906)	70.5
Meharry Medical College		(1914) 52.6, (1924)	65.9
University of Nashville Medical Department		(1906)	67
University of Tennessee College of Med.		(1924) 68.1, (1925)	70.7
University of the South Medical Department, Sewanee		(1900) (1908) 66.6	49.7,
Vanderbilt University School of Medicine		(1883) 71.5, (1901)	70.2
University of Vermont College of Med.		(1882) 68.1, (1909)	73
University of Havana, Cuba		(1923)* 68.3, (1925)*	61.7

* Verification of graduation in process.

Book Notices

THE PRINCIPLES OF ANATOMIC ILLUSTRATION BEFORE VESALIUS: An Inquiry into the Rationale of Artistic Anatomy. By Fielding H. Garrison, A.B., M.D. Cloth. Price, $2.50 net. Pp. 58, with illustrations. New York: Paul B. Hoeber, Inc., 1926.

With the charm that pervades all the historical writings of Dr. Garrison, this volume presents a philosophic consideration of the relationship of modern anatomy to the art and science of the middle ages. Dr. Garrison feels that we have plenty of *vernunft*, but that we lack greatly in *verstand*. The prime factor of importance in illustration before Vesalius was first hand observation of external configuration. Dr. Garrison presents simple facts concerning anatomic illustration, accompanying them with observations based on his extensive reading, that strike like gleams of color in the midst of these musty records. The book itself is beautifully printed like the other numbers of this series, and handsomely illustrated with numerous especially selected illustrations. The edition is limited and desirable.

DISEASES OF THE SKIN. By Richard L. Sutton, M.D., LL.D., F.R.S., Professor of Diseases of the Skin, University of Kansas School of Medicine. Sixth edition. Cloth. Price, $12. Pp. 1303, with 1158 illustrations. St. Louis: The C. V. Mosby Company, 1926.

The numerous editions of this handsomely printed and illustrated textbook on the diseases of the skin may be taken as an indication of the desire of the author and the publisher to keep the volume strictly up to date in its field. This is especially the case since the mechanical considerations involved in the revision and reprinting of a book of this scope are considerable. The new edition is marked by the elimination of much obsolete matter, a concrete presentation of the advances made in the diagnosis and treatment of syphilis, and the addition of sections on some of the more recently discovered disturbances of the skin, such as Fox-Fordyce disease, mycotic paronychia (Kingery-Thienes), congenital ectodermal aplasia, cheilitis, actinica chronica (Ayres), ulcus vulvae acutum, glossitis rhombica mediana, achromia parasitica, and the dermatologic aspect of rat-bite fever. Dr. Sutton points out that more than 800 references to current literature in this field have been consulted in the making of the revision and are included in the brief bibliographic summaries that follow each of the major topics discussed. The illustrations, always of great importance in a textbook on diseases of the skin, are here printed on a high quality of enameled paper.

BIOLOGICAL RELATIONS OF OPTICALLY ISOMERIC SUBSTANCES. By Arthur R. Cushny, M.A., M.D., LL.D., Professor of Pharmacology and Materia Medica in the University of Edinburgh. Cloth. Price, $2. Pp. 80, with 4 illustrations. Baltimore: Williams & Wilkins Company, 1926.

Every pure substance has a definite composition and structure. And while a composition as complex as $C_6H_{12}O_6$ admits of considerable variation in the manner in which the component atoms may be linked together, each variation in structure is associated with a variation in the identity of the substance for which it is characteristic. When two asymmetrical substances differ only as does the right hand from the left in the correspondence of their structures, they are called optical isomers. They were at first thought to be identical in every chemical and physical property excepting in the direction which they rotate the plane of a beam of incident, polarized light. But optical isomers behave as identical compounds only in their reactions with substances of symmetrical structure. Protoplasm, predominatingly asymmetrical in its make-up, reacts in a quantitatively different fashion with one of a pair of optical isomers than with the other. It is with such quantitative differences in the physiologic action of optical isomers that this book has to deal. Some of the chapters are on the relation of enzymes and optically active bodies; the decomposition of isomers in living tissues; the pharmacologic action of optical isomers; general aspects of the pharmacologic action, and influence of configuration on pharmacologic action. The author brings out a clear connection between the actions of optical isomers in the test tube and in living tissue. "Optical isomers differ in their pharmacological action proper, just as they differ in their reactions with enzymes or with substances of known structures such as alkaloids or acids. And they exhibit here also the same variability; for example, among the hyoscyamines and hyoscines, the laevo-rotary forms act about fifteen times as strongly as the dextro-rotary in certain organs in which they are said to exert 'a specific action,' while in other positions, such as in striated muscle or the nerve-ends supplying it, the isomers are equally and only feebly toxic." Conclusions are drawn only from quantitative relations based on measurements of the intensity of a definite action on a given tissue. Students of practical medicine will find the book easy to read, enjoyable, and highly informative.

POLITZER'S TEXT-BOOK OF THE DISEASES OF THE EAR. For Students and Practitioners. Revised by Milton J. Ballin, M.D., Ph.B., Attending Oto-Rhino-Laryngologist, Bronx Hospital, New York City. Sixth edition. Cloth. Price, $10. Pp. 776, with 302 illustrations. Philadelphia: Lea & Febiger, 1926.

This textbook contains a vast amount of solid information based on the enormous clinical observations of a master. Politzer, "who saw everything," leaves in this book a mass of authoritative material which can never grow old. The translator has tried to keep as much as possible the original text; a worthy effort to preserve it, as a sort of monument, to the great teacher. To do this, however, a price has been paid in that the literature of the last twenty years has received little attention; for the student who wishes a point of view abreast of the times, this is a matter for regret.

LEHRBUCH DER GYNÄKOLOGIE FÜR STUDIERENDE UND AERZTE. Von Dr. Med. Robert Schröder, Ord. Professor für Geburtshilfe und Gynäkologie und Direktor der Universitäts-Frauenklinik in Kiel. Second edition. Paper. Price, 35 marks. Pp. 725, with 333 illustrations. Leipsic: F. C. W. Vogel, 1926.

This edition, appearing four years after the first, with considerable new material, will be welcomed by students of gynecology as one of the most complete and practical works on the subject. The illustrations include many colored photomicrographs and drawings, and add greatly to the work. As with most German medical authors, one is struck by the absence of references to works of Americans. The work of Robert Frank is frequently quoted, but only a rare reference to other American authors is made. Schröder's treatment of the subject of menstruation and its disorders is monographic in its scope, though occupying only sixty-five pages. Endometriosis, the subject under such active discussion in this country, is hardly mentioned. The same may be said of the subject of pneumoperitoneum for gynecologic diagnosis, which he mentions for the demonstration of pelvic adhesions. The Rubin test he says is still on trial, and he emphasizes not so much its utilization as the dangers of injury to the endometrium and air emboli of the parametrium. The beautifully illustrated chapter on carcinoma of the uterus well summarizes the German literature on this subject, with a full discussion of methods of treatment and end results.

THE WHITE SPOTS OF EPILEPSY AND OTHER PHASES OF THE DISEASE. By Edward A. Tracy, M.D., School Physician, Boston Public Schools. Cloth. Price, $2.50. Pp. 129, with 12 illustrations. Boston: Richard T. Howard, 1926.

This booklet contains a collection of short articles and reprints of articles published in nonspecialist journals, all dealing with what the author considers an important objective sign of early epilepsy; namely, white spots. He finds them in epilepsy, and he believes that they aid greatly in the detection of that disease; indeed, he is firmly convinced that a knowledge of them and the epileptic vasomotor reactions is necessary for its accurate diagnosis. He thus describes the spots: "They are observable on the arm, the back of the hands, or the face; are chronic in location, and evidently caused by vasoconstriction; that is, the blood vessels of the skin contract locally and squeeze out their blood content, thus making the white spot." The author speaks of an incipient stage of epilepsy, without convulsive seizures, that quite frequently progresses unrecognized, with no diagnosis ventured until recurrent convulsions occur. It is in this

phase of the disease that he finds the white spots helpful in diagnosis. His articles are mostly short papers reiterating his belief in the existence of white spots which he also terms "Tracy spots" in epilepsy, supported by a few photographic reproductions, which are not convincing. The same may be said of the few incomplete case histories with so-called cures. Though the author feels that he has made a real discovery, he fails to mention the name of one neurologist who has verified his observations.

HYDROGEN ION CONCENTRATION OF THE BLOOD IN HEALTH AND DISEASE. By J. Harold Austin, Professor of Research Medicine, University of Pennsylvania, and Glenn E. Cullen, Professor of Biochemistry, Vanderbilt University Medical School. Cloth. Price, $2. Pp. 75, with 8 illustrations. Baltimore: Williams & Wilkins Company, 1926.

This aims to bring together "in concise form for the use of clinicians and workers in clinical laboratories" the most important knowledge relative to the clinical significance of variations in the hydrogen ion concentration of the blood. The first chapter introduces and develops the fundamental conceptions of p_H, buffer action, acid-base balance, and alkali reserve. The second and third chapters summarize the existing literature relative to the acid-base balance of normal plasma and of the plasma of persons suffering from diabetes, toxemia, shock and tetany. The final chapter contains directions for the determination of the hydrogen ion concentration. The book as a whole is admirably conceived, and the amount of material and bibliography presented make it a valuable reference handbook for workers in this field. It would, perhaps, be more useful had its subject matter been presented in a more critical and extended form.

BIRTH CONTROL AND THE STATE. A Plea and a Forecast. By C. P. Blacker, M.C., M.A., M.R.C.S. Cloth. Price, $1. Pp. 87. New York: E. P. Dutton & Company, 1926.

This is one of the volumes in the "Today and Tomorrow" series. Although these volumes are small and are published to retail at a dollar each, many of them are fascinating contributions to the literature of man and his future. This little volume maintains the high standard of the series. It is a sort of primer of birth control. But to write a good primer requires a master; and Blacker lives up to that requirement. The first half of the book is devoted to a brief but illuminating summary of, first, the more serious arguments against birth control, and, then, of those for it. In thirty-eight small pages of 125 words each, the two sides of the argument are summarized. Any one who becomes familiar with these thirty-eight pages has before him a perspective of this highly important subject. The exposition has been done not by a propagandist, but by one who without bias frankly and intelligently sets forth the arguments on both sides. Then the author proceeds in forty-three pages to give his interpretation of the questions involved in the problem. These questions are no less important than the future of the human race. Nowhere else within our knowledge are some of present civilization's problems considered more succinctly or with more stimulating suggestiveness. He points out great national problems which, students of the world's future recognize, threaten Western civilization. The points he makes are not those of the fanatic or the alarmist, but of a man of vision and of comprehension of the present great national problems. It is a fascinating chapter. The thoughtful man could hardly begin reading it and bear interruption without impatience. The whole book can easily be read in an evening and, after the first pages giving the elementary facts, it compels interest. Surely such a book should appeal to medical men of intelligence and imagination. Birth control is a biologic topic; it is a problem of medicine; and Blacker appeals to the medical profession to give the subject its attention and to take wise action regarding it. Medical men, as a rule, are not conversant with the terms of the problem; many of them are inclined to regard it as a sex problem, chiefly interesting to fanatics and of no particular importance. They owe it to themselves to disabuse their minds of this superficial notion. Birth control comes within the domain of the great problems of mankind, and medicine has a responsibility in the problem which it should assume. Physicians should familiarize themselves with its terms. One could hardly do this more readily than from this little book, and certainly one could not do it in a more interesting way.

LEITFADEN DER NEUROLOGISCHEN DIAGNOSTIK: Eine Differentialdiagnose aus dem führenden Symptom für praktische Aerzte und Studierende. Von Dr. Kurt Singer, Nervenarzt in Berlin. Second edition. Paper. Price, 9 marks. Pp. 246, with 34 illustrations. Berlin: Urban & Schwarzenberg, 1926.

This excellent little book is neither a compend nor a textbook. It contains sufficient information concerning anatomic and physiologic facts to remove it from the former category entirely and to make the work of diagnosis both logical and educational. It presents the symptomatology of nervous diseases in a grouping that shows the path to making a differential diagnosis with the chief symptom presented by the patient as the starting point. The first chapters deal with the general manifestations of peripheral and central lesions; all others discuss such symptoms as muscular atrophy, changes in reflexes, disturbances in gait, vertigo, tremor and headache. In this edition, the book has been largely rewritten and brought down to date. The work is well done and worth while; the illustrations are clear and simple, and there is an excellent index. The book should prove of great value to the internist and the general practitioner, for whom it was designed.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

HISTOLOGICAL TECHNIQUE: For Normal Tissues, Morbid Changes and the Identification of Parasites. By H. M. Carleton, M.A., B.Sc., D.Phil., University Lecturer in Histology, Oxford. Chapters VII. and VIII. in collaboration with Frederic Haynes, B.A., Demonstrator of Histology. Cloth. Price, 16 shillings. Pp. 398, with illustrations. New York: Oxford University Press, 1926.

A beautifully printed, well organized guide to laboratory methods in microscopic anatomy.

SURGERY OF NEOPLASTIC DISEASES BY ELECTROTHERMIC METHODS. By George A. Wyeth, M.D. Preface by Howard A. Kelly, M.D. Cloth. Price, $7.50 net. Pp. 298, with 137 illustrations. New York: Paul B. Hoeber, Inc., 1926.

Complete outline of the use of electric methods in treatment of tumors, referring to the "endotherm knife" and similar devices.

THE SURGERY OF GASTRO-DUODENAL ULCERATION. By Charles A. Pannett, B.Sc., M.D., F.R.C.S., Professor of Surgery in the University of London. Cloth. Price, $3.25. Pp. 154, with 55 illustrations. New York: Oxford University Press, 1926.

Monograph with due emphasis on recent periodical literature and the technic of various operative measures.

RADIOTHERAPY IN RELATION TO GENERAL MEDICINE. By Francis Hernaman-Johnson, M.D., Radiologist to the French Hospital, London. Cloth. Price, $1.75. Pp. 211. New York: Oxford University Press, 1926.

A handbook of general principles, well suited to the needs of the general practitioner.

DAS AUTONOME NERVENSYSTEM. Von Dr. Med. Erich Schilf, Privatdozent für Physiologie. Paper. Price, 16.50 marks. Pp. 207, with 25 illustrations. Leipsic: Georg Thieme, 1926.

Monographic compendium on autonomic system from physiologic point of view.

A LABORATORY MANUAL FOR ELEMENTARY ZOÖLOGY. By Libbie Henrietta Hyman, Department of Zoölogy, University of Chicago. Cloth. Price, $2.50. Pp. 182. Chicago: University of Chicago Press, 1926.

Guide to University of Chicago methods in teaching the elements of zoology.

ANAFILAKSIJA (EKSPERIMENTIŠKIEJI TYRINĖJIMAI). Por E. o. prof. V. Lašas, Medicinos fakulteto Fiziologijos ir Fiziologines chemijos laboratorijos vedejas. Paper. Pp. 116, with illustrations. 1926.

THE NATIONAL GOVERNMENT AND PUBLIC HEALTH. By James A. Tobey, M.S., LL.B. The Institute for Government Research, studies in administration. Cloth. Price, $3. Pp. 423. Baltimore: Johns Hopkins Press, 1926.

An analysis of American governmental activities in the public health field.

DISEASES OF CHILDREN: A Short Introduction to Their Study. By Hector Charles Cameron, M.A., M.D., F.R.C.P., Physician and Physician-in-Charge of the Department for the Diseases of Children, Guy's Hospital. Cloth. Price, $1.75. Pp. 199. New York: Oxford University Press, 1926.

Much common sense and sound advice in a small compass.

BRAIN AND HEART: Lectures on Physiology. By Giulio Fano, of The Royal University of Rome. Translated by Helen Ingleby. With a Foreword by Prof. E. H. Starling, C.M.G., M.D., D.Sc., University College, London. Cloth. Price, $2.75. Pp. 142, with 19 illustrations. New York: Oxford University Press, 1926.

Observations of an Italian medical philosopher.

NORMAL BACKWARDNESS AND BALANCE IN CHILD LIFE. By George Dow Scott, A.B., B.S., M.D., Pediatrist to the New York Lutheran Hospital. Cloth. Price, $1.75. Pp. 132. Boston: Richard G. Badger, 1926.

Sound advice in mental hygiene and nutrition of the child.

TAFELN MIT UMSCHLAGFARBEN ZUM NACHWEIS VON RELATIVER ROT- UND GRÜNSICHTIGKEIT. Von Dr. med. Ernst Wölfflin, a. o. Professor an der Universität Basel. Cloth. Pp. 8, with 8 plates. Leipsic: Georg Thieme, 1926.

Plates for determining red green color blindness.

DIE OPERATIVE TECHNIK DES TIEREXPERIMENTES. Von H. F. O. Haberland, Dr. Med., a. o. Professor für Chirurgie an der Universität Köln. Paper. Price, 28.50 marks. Pp. 336, with 300 illustrations. Berlin: Julius Springer, 1926.

Technic of experimentation on animals.

STILLINGS PSEUDO-ISOCHROMATISCHE TAFELN ZUR PRÜFUNG DES FARBENSINNES. Herausgegeben von Geheimrat Prof. Dr. E. Hertel, Direktor der Universitäts-Augenklinik in Leipzig. Seventeenth edition. Cloth. Price, 18 marks. Pp. 2, with 14 plates. Leipsic: Georg Thieme, 1926.

Plates for testing color vision.

OPIUM THE DEMON FLOWER. By Sara Graham-Mulhall. Cloth. Price, $2. Pp. 310. New York: Harold Vinal, 1926.

A popular presentation of the American situation in regard to drug addiction.

STUDIES IN INTRACRANIAL PHYSIOLOGY AND SURGERY. The Third Circulation. The Hypophysis. The Gliomas. By Harvey Cushing, M.D. The Cameron Prize Lectures delivered at the University of Edinburgh, October 19, 20, 22, 1925. Cloth. Price, $3.25. Pp. 146, with 16 illustrations. New York: Oxford University Press, 1926.

THE LEARNED AND SCIENTIFIC PUBLICATIONS OF THE UNIVERSITY OF NEBRASKA (1871-1926). Compiled by Jacob Henry Gable, Jr. Volume VI. Bibliographical Contributions from the University of Nebraska Library. Edited by Gilbert Harry Doane, Librarian. Paper. Pp. 130. Lincoln: The University of Nebraska, 1926.

REPORTS OF THE COMMITTEE UPON THE PHYSIOLOGY OF VISION: ILLUMINATION AND VISUAL CAPACITIES. (A Review of Recent Literature.) Medical Research Council. Special Report Series, No. 104. By R. J. Lythgoe, M.A., B.Ch. Paper. Pp. 80. London: His Majesty's Stationery Office, 1926.

SMALL-POX AND CLIMATE IN INDIA; FORECASTING OF EPIDEMICS. By Sir Leonard Rogers, C.I.E., M.D., F.R.C.P. Medical Research Council. Special Report Series, No. 106. Paper. Pp. 22, with illustrations. London: His Majesty's Stationery Office, 1926.

PSYCHOLOGICAL MONOGRAPHS: University of Iowa Studies in Psychology, Numbers 9 and 10. Volume XXXVI, Nos. 1 and 2. Edited by Carl E. Seashore. Paper. Pp. 262 and 114. Princeton, N. J.: Psychological Review Company, 1926.

THE ROCKEFELLER FOUNDATION, A REVIEW FOR 1925. By George E. Vincent, President of the Foundation. Paper. Pp. 59, with illustrations. New York: The Rockefeller Foundation, 1926.

APPENDICITE. Por Dott. Prof. F. Caneva Zanini, Docente in Medicina Operatoria presso la R. Università di Milano. Paper. Pp. 96. Milan: Casa di Salute Caneva, 1926.

OPPORTUNITIES FOR CLINICAL STUDY IN HOSPITALS OF NEW YORK CITY WITH TRANSPORTATION GUIDE. Paper. Pp. 84. New York: New York Academy of Medicine, 1926.

L'HÉRÉDITÉ MUSICALE. Par Docteur Louis Vezoux, de la Faculté de médecine de Paris. Paper. Pp. 279. Paris: E. le François, 1926.

REPORT OF THE JOINT SELECT COMMITTEE TO CONSIDER DRUG ADDICTION IN RHODE ISLAND. Paper. Pp. 14. Providence, 1926.

NEL XXV° ANNO D'INSEGNAMENTO DEL PROF. LUIGI DEVOTO, 1900-1925. Paper. Pp. 91. Milan, 1925.

Medicolegal

Heat Prostration Damage to Physical Structure of Body

(Texas Employers' Ins. Ass'n v. Moore et al. (Texas), 279 S. W. R. 516)

The Court of Civil Appeals of Texas, in affirming a judgment for the defendants in this suit instituted to set aside an award of the industrial accident board for the death of a pressman, says that the jury found that he died of heat prostration and that his death was directly and proximately caused by the conditions of the rooms in which he was working at the time of his death. The insurance association contended that the jury should have been required to find whether or not the death was the result of such an injury received in the course of his employment as "meant damage or harm to the physical structure of his body, or such disease or infection as naturally results therefrom." Is heat prostration, superinduced by such special and artificial conditions as here obtained, a damage or harm to the physical structure of the body, or such disease or infection as naturally results therefrom? If it is, the questions that the court asked imported the same thing as those the association wanted substituted, and there was no prejudicial error in choosing the one form of submission over the other. To ask this question seems to this court to answer it. The medical authorities tell us that heat stroke or prostration, which terms they quite generally use as interchangeable, is a condition of the body produced by great heat, and, if it is a resulting state of the body at all, the lay mind does not readily apprehend how it can be other than such a one as naturally flows from some damage or harm to its physical structure; in other words, an external cause or agency which, when applied thereto, produces such perceptible change in the body or its functions as suddenly to still forever the operation of its vital organs, as was the finding in this instance, necessarily inflicts an injury on its physical structure. So the jury's answers to the questions given elicited in effect the same facts as the association desired found, and the point urged constituted a distinction without a difference. Nor does the court agree with the contention that death resulting from heat stroke or heat prostration, as in this case, is not compensable under the terms of the employers' liability act of Texas because the death of one so caused is not the result of an injury, or personal injury, as defined in the act, but is caused by the act of God.

Insufficient Evidence Water Caused Typhoid

(Webber et ux. v. Pacific Power & Light Co. (Wash.), 242 Pac. R. 1104)

The Supreme Court of Washington, in reversing a judgment for $1,000 damages rendered in favor of the plaintiffs, husband and wife, on account of Mrs. Webber having been taken ill with typhoid, says that the plaintiffs' home was furnished water from a connection from one of the defendant's mains at a point approximately 400 feet from a dead end of the main where there was a fire hydrant. That hydrant was supposed to be opened from time to time to let the still or dead water escape. For present purposes the court assumes that the defendant neglected to cause the dead end of the main to be so flushed for a period of a month or more prior to Mrs. Webber's becoming sick, and that such flushing should have been done probably as often as once in every two weeks, in order to keep the water in the dead end reasonably pure. The physician who attended Mrs. Webber, while arriving at the conclusion that she might have become infected with typhoid bacteria from the use of the water from the defendant's main, yet testified that he never did satisfy himself about it. Moreover, he gave it as his opinion that the only other (three) cases of typhoid in the city from January to August were the result of causes other than the water furnished by the defendant. In July, a month after his wife was taken with the fever, Mr. Webber procured an empty bottle from a drug store and filled it with water from the faucet in their house, first letting the water run awhile, corked the bottle, sealed it, and sent it to the assistant bacteriologist at the state college, for analysis. The bottle was not packed in ice or in any

manner protected looking to the preservation of its proper temperature in transit so as to have the water remain in the same condition, as to bacteria, during transit, and it was five days in transit, during the heat of summer. The assistant bacteriologist analyzed the water soon after its arrival, and found typhoid bacteria in it, but he refused to guarantee his report because of want of sanitary putting up of the water in a proper container and because of its delay in transmission. About two weeks after that sample was sent, Mr. Webber following the suggestion of the assistant bacteriologist, obtained proper sanitary containers, and, following directions, sent other samples of water from the faucet in their home to the state board of health, whose analyses of those samples failed to disclose the presence of any typhoid bacteria. Under these circumstances the supreme court feels constrained to hold that to allow the judgment in favor of the plaintiffs to stand would be simply to allow it to rest on pure conjecture and speculation. It could not be said with any degree of certainty—indeed, what evidence there was negatived the idea—that Mrs. Webber became infected with typhoid bacteria from the water used by her from the defendant's main. The possible impurities or stagnant nature of the water in the dead end manifestly, in the light of the undisputed evidence as to its nature, furnished no support whatever to the plaintiffs' right of recovery. This was but a case in which one of many causes might have resulted in Mrs. Webber becoming infected with typhoid bacteria.

Chiropractor Treated as Intruder into Profession

(Cummings v. State ex rel. Biggs, Solicitor (Ala.), 106 So. R. 852)

The Supreme Court of Alabama says that the state, by its solicitor of the twenty-first judicial circuit, instituted this proceeding against defendant Cummings. It was an action in the nature of a quo warranto, charging the defendant with intruding into the profession of treating diseases of human beings, which requires a license or certificate of authorization, which he did not obtain from the state board of medical examiners. This petition was filed by the solicitor under subdivision 1, section 9932, code of 1923, under written direction from the judge of the circuit, as is permitted by section 9933 of the code. A jury returned a verdict in favor of the state, and a judgment thereon excluding the defendant from practicing this profession is, on an appeal, affirmed.

That part of the Alabama statute applicable, under which the petitioner was proceeding, states: "When any person . . . intrudes into . . . any profession requiring a license or certificate or other legal authorization within this state." The treatment of diseases of human beings in Alabama is a profession, and this profession cannot be lawfully practiced by a person in the state without a proper license or certificate of qualification. The petition averred that the defendant intruded into the profession of treating or offering to treat diseases of human beings in Baldwin County, Alabama. This clearly showed the profession he was practicing; and it averred that he was an intruder therein; that a license or certificate of qualification to practice this profession from the state board of medical examiners was required, and that he had not obtained this certificate or license. This was sufficiently definite and certain, and the court did not err in overruling demurrers to the original petition.

However, by leave and under order of the court, the state, by its solicitor, amended the petition, so that there were in the amendment two disjunctive averments:

> Has intruded into the profession of treating or offering to treat diseases of human beings by a system of treatment known as the chiropractic system, or did treat or offer to treat diseases of human beings as a chiropractor, a profession requiring a license or certificate.

But each alternative averment distinctly designated with certainty the profession—treating or offering to treat diseases of human beings. The petition as amended, when considered as a whole, sufficiently designated the profession he was practicing, the intrusion by him into it, that a certificate or other legal authorization within the state was required to practice it, and that he had not obtained from the state board of medical examiners of Alabama a certificate or the license required by law. This petition as amended was not subject to the demurrers of the defendant, and the court did not err in overruling them.

It was clear from the evidence, and without dispute, that the defendant was in the profession of a chiropractor. It was clear and undisputed that he had, since Aug. 18, 1924, practiced this profession of treating diseases of human beings by the chiropractic system in Baldwin County, Ala., and that he was prohibited by statute from so doing unless he had authority by certificate or license to do the acts. When the foregoing acts were shown by the state, they made out a prima facie case against him, and cast on him the burden of showing authority by proper certificate or license to practice that profession, as the proof of these facts was peculiarly within his knowledge. He offered no evidence, and the trial court very properly gave the affirmative charge to the jury, that if it believed the evidence in this case, it must find the defendant guilty as alleged in the petition.

Proceedings for Revocation of License and on Appeal

(In re Shortridge (N. D.), 207 N. W. R. 442)

The Supreme Court of North Dakota, in affirming a judgment which affirmed an order of the board of medical examiners of the state revoking the license of the appellant to practice medicine and surgery in the state, says that the grounds alleged in the order were stated to be that the licensee was, in August, 1924, convicted of a crime involving moral turpitude, to wit, registering at a hotel under a fictitious name; that in August, 1924, he performed a criminal abortion on a person named in the order; and that on Dec. 5, 1924, he was convicted of a felony, to wit, murder in the second degree. He appealed from an order of the district court denying his motion for change of venue, for a trial de novo (anew), for a jury trial, from an order denying his motion to take evidence before the district court, and from its order affirming the findings and decision of the board of medical examiners revoking the license.

The licensee was directed to show cause before the board in the office of its secretary at Grand Forks in Grand Forks County. He appeared at the time and place stated in the order to show cause, offered testimony, and a due hearing was had. It was not suggested that he made a request of the board for a change of venue; he did not move that the hearing before the board be had in the county of his residence, but, apparently, without objection, submitted to the jurisdiction of the board sitting in Grand Forks County. Section 468 of the compiled laws of 1913, which is a part of the statutes regulating the practice of medicine, enacted as chapter 189 of the session laws of 1911, clearly and unmistakably provides that the appeal from the order of the board lies to the district court of the county in which "such decision was made." It does not say that the case may thereafter be transferred to the county of the respondent's residence. The respondent himself appealed to the district court of Grand Forks County. The board had jurisdiction, in the circumstances, to hear the matter before it in that county; on elementary principles, the district court had jurisdiction, which the respondent could not oust by an affidavit for a change of venue in the manner provided for changing the venue of cases originating in the district court. Whether it would ever be a denial of due process of law for the board to refuse to hear such a proceeding in the county of the respondent's residence, or in some county other than that of the residence of its secretary, this court need not decide. It is conceivable that such a strong showing might be made that it would be error on the part of the board not to change the place of hearing.

The appellant contended that he had not had a day in court, because the trial court refused to take testimony anew, but decided the case on the record as transmitted to it by the board of medical examiners. It seemed to be the contention of counsel that, before the appellant might be deprived of the right to practice medicine in North Dakota, he was entitled to a trial in the district court—to be confronted by witnesses in that trial—and that only evidence not legally objectionable should be adduced and used as a basis for a

judgment canceling his license. But the proceeding to cancel a license is not judicial; it is administrative. The state may prescribe the conditions under which a person may be permitted to hold himself out to the public as a qualified physician and surgeon; it may give a board the power to grant and revoke licenses to practice medicine on grounds prescribed in the law. Ordinarily the courts will not interfere with the action of such a board in cases in which it has acted arbitrarily, or threatens to act under statutes purporting to give arbitrary power to deprive a person of the valuable right to practice his profession. This court is of the opinion that the appellant was not entitled to a new trial in the district court, with the right to introduce new evidence. This court thinks that the statute clearly contemplates that the trial in the district court shall be on the record transmitted by the board of medical examiners and the evidence on which that tribunal based its findings and conclusion. Section 468 requires the board to reduce the testimony to writing and to transmit the transcript thereof to the district court in case of appeal. There is no suggestion in the statute that there shall be a new trial in the district court, with the right to offer new evidence, or, perhaps, raise new issues. The statute simply allows an appeal on the record as made by and before the board. Manifestly, the right of review thus accorded is amply sufficient to protect the right of the physician to due process and to insure against arbitrary action by the board depriving him of substantial legal rights.

Death from Pneumonia After Taking Cold

(Newkirk v. Golden Cycle Mining & Reduction Co. et al. (Colo.), 244 Pac. R. 1019)

The Supreme Court of Colorado, in affirming a judgment which affirmed an order of the industrial commission denying compensation to the claimant for the death of her husband, says that the accident was taking cold by exposure while her husband was fighting a fire on his employer's premises. Pneumonia appeared seven or eight days later, of which he died in six days. The industrial commission found that there was no connection between the cold and the pneumonia. There was evidence of competent physicians, among whom was the attending physician, to that effect. This court, therefore, as well as the district court, must take the finding as true. It was urged that the cold made the employee more susceptible to the pneumonia germ, but that was not a sufficient connection with the accident to justify compensation, because the accident must be the proximate cause of the death or of the disease that causes the death. The denial was therefore right. The commission also found that the cold was not an accident. If the employee had died of the cold, the court would have had here a serious question, but on this record it was not before the court.

Validity of "Meat Ordinance"—Meaning of "Sanitary"

(Mayor and City Council of Baltimore et al. v. Blocher & Schaff, Inc., et al. (Md.), 132 Atl. R. 160)

The Court of Appeals of Maryland says that it has no doubt that under the charter of the city of Baltimore the mayor and city council of Baltimore had the power to adopt an ordinance of the character of one adopted June 25, 1925, known as the "meat ordinance," the subject and purpose of which were to regulate that business so as more effectually to preserve and protect the public health. Much of the bill of complaint as well as of the briefs was devoted to a discussion of the wisdom, necessity and propriety of the ordinance; but since those are legislative rather than judicial questions, the court will not refer to them further than to say that, in view of the decisions of this court, as well as of the courts of practically every other state and of the federal government, it is now too late to deny the power of the state to regulate any business which if unregulated may menace the public health, and that the slaughtering of animals and the preparation and sale of the carcasses thereof for human food is such a business.

Section 7, which was the first part of the ordinance especially objected to, provides:

> That the commissioner of health shall cause to be made from time to time by experts in sanitation, and by other competent inspectors, such inspection of all slaughtering, meat, canning, salting, packing, rendering or similar establishments in which cattle, sheep, swine and goats are slaughtered and meat and meat food products thereof are prepared for sale, offered for sale, or sold in the city of Baltimore, as may be necessary to inform himself concerning the sanitary conditions of the same, and where the sanitary conditions of any establishments are such that the meat or meat food products are rendered unclean, unsound, unhealthful, unwholesome or otherwise unfit for human food, the commissioner of health shall refuse to allow said meat or meat food products to be labeled, marked, stamped and tagged "inspected and passed."

The primary, patent and essential purpose of this section is to confer on the inspectors the power to condemn material that is intrinsically unsound, unhealthful, unwholesome or otherwise unfit for human food, and it confers on them no other or broader power whatever. The reference to the sanitary condition of the establishments where such products are prepared means nothing more than that when such establishments are so negligently operated, and the conditions surrounding the preparation of their products so filthy or insanitary, that as a matter of common and usual experience it would be impracticable if not impossible to say with certainty that the products were sound, wholesome and fit for food, they may be condemned.

It is true that the section fails to define the word "sanitary," but it is evident from the whole enactment and from the particular context that it is to be given its ordinary and accustomed meaning. As thus defined, it means that which pertains to health, with especial reference to cleanliness and freedom from infective and deleterious influences.

Society Proceedings

COMING MEETINGS

American Association for Thoracic Surgery, Montreal, Canada, Sept. 30-Oct. 2. Dr. Ethan Flagg Butler, Robert Packer Hospital, Sayre, Pa., Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Chicago, Sept. 20-22. Dr. James E. Davis, 111 Josephine Ave., Detroit, Secretary.

American Association of Railway Surgeons, Chicago, Nov. 3-5. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.

American Climatological and Clinical Association, Philadelphia, Sept. 27-28. Dr. A. K. Stone, Auburn Street, Framingham Center, Massachusetts, Secretary.

American College of Physical Therapy, Chicago, Oct. 18-23. Dr. R. W. Fouts, City National Bank Building, Omaha, Secretary.

American College of Surgeons, Montreal, Canada, Oct. 25-29. Dr. Franklin H. Martin, 40 East Erie Street, Chicago, Director-General.

American Public Health Association, Buffalo, Oct. 11-14. Mr. Homer N. Calver, 370 Seventh Avenue, New York, Executive Secretary.

Association of American Medical Colleges, Cleveland, Ohio, Oct. 25-27. Dr. F. C. Zapffe, 25 East Washington Street, Chicago, Secretary.

Association of Military Surgeons of the United States, Philadelphia, Oct. 14-16. Col. J. R. Kean, U. S. A., Ret., Army Medical Museum, Washington, D. C., Secretary.

Central States Pediatric Society, St. Louis, Oct. 22-23. Dr. H. T. Price, Westinghouse Building, Pittsburgh, Secretary.

Colorado State Medical Society, Colorado Springs, Sept. 21-23. Dr. F. B. Stephenson, 460 Metropolitan Building, Denver, Secretary.

Delaware State Medical Society, Dover, Oct. 12-13. Dr. W. O. La Motte, Industrial Trust Building, Wilmington, Secretary.

Indiana State Medical Association, West Baden, Sept. 22-24. Mr. T. A. Hendricks, Hume-Mansur Building, Indianapolis, Executive Secretary.

Inter-State Postgraduate Medical Association of North America, Cleveland, Oct. 18-22. Dr. W. B. Peck, 82 Stephenson Street, Freeport, Ill., Managing Director.

Kentucky State Medical Association, Frankfort, Sept. 20-23. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

National Tuberculosis Association, Washington, D. C., Oct. 4-7. Dr. George M. Kober, 1819 Eye Street, N. W., Washington, D. C., Sec'y.

Nevada State Medical Association, Reno, Sept. 24-25. Dr. H. J. Brown, Gray-Reid Building, Reno, Secretary.

Pennsylvania, Medical Society of the State of, Philadelphia, Oct. 11-14. Dr. Walter F. Donaldson, Jenkins Arcade, Pittsburgh, Secretary.

Southern Minnesota Medical Association, Mankato, October 18. Dr. H. T. McGuigan, Redwing, Secretary.

Southwest, Medical Association of the, Kansas City, Mo., Oct. 11-14. Dr. E. H. Skinner, Rialto Building, Kansas City, Mo., Secretary.

Vermont State Medical Society, Burlington, Oct. 14-15. Dr. W. G. Ricker, 29 Main Street, St. Johnsbury, Secretary.

Virginia, Medical Society of, Norfolk, Oct. 12-15. Miss Agnes V. Edwards, 104½ West Grace Street, Richmond, Secretary.

Western Surgical Association, Duluth, Minn., Oct. 14-16. Dr. H. P. Ritchie, Lowry Building, St. Paul, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

1: 527-670 (June) 1926

*Functional Disorders of Heart. P. D. White, Boston.—p. 527.
*Cardiac Neurosis Associated with Rheumatic Valvular Heart Disease. L. F. Viko, Salt Lake City.—p. 539.
*Paroxysmal Ventricular Tachycardia. A. R. Gilchrist, Edinburgh.—p. 546.
*Paroxysms of Tachycardia in Hodgkin's Disease. V. C. Graber, Iowa City.—p. 564.
*Gain in Weight as Guide in Convalescent Care of Cardiac Children. H. McCulloch, St. Louis.—p. 569.
*Clinical Features of Cases Exhibiting Electrocardiograms Conforming to Those of Experimental Complete Bundle-Branch Block. F. A. Willius, Rochester, Minn.—p. 576.
*Supernormal Phase in Conduction and Recovery Curve for Human Junctional Tissues. R. Ashman and G. R. Herrmann, New Orleans.—p. 594.
Prognosis in Rheumatic, Hypertensive and Syphilitic Heart Disease. E. F. Horine, Louisville, Ky.—p. 617.
*Prognostic Significance of Several Common Electrocardiographic Abnormalities. J. Hepburn and R. A. Jamieson, Toronto.—p. 623.
*Comparative Study of "Rheumatic" Mitral Regurgitation and Mitral Stenosis. H. B. Sprague and P. D. White, Boston.—p. 629.
*Hypertension and Increased Basal Metabolic Rate. E. P. Boas and S. Shapiro, New York.—p. 643.

Functional Disorders of Heart.—An analysis was made by White of 1,500 consecutive patients with cardiac symptoms and signs, in order to determine the absolute and relative incidence of functional disorders of the heart. Of the whole group, 16 per cent showed congestive failure; many had fever, and 13 per cent had angina pectoris. Thirty-six per cent had functional disorders of the heart without any demonstrable clinical evidence of cardiac structural change. This does not include a group of forty-eight cases of uncomplicated angina pectoris. The functional disorders shown by this group, excepting angina pectoris, were effort syndrome or the nervous heart, premature beats or extrasystoles of either ventricular or auricular origin, paroxysmal tachycardia, auricular flutter, auricular fibrillation, functional systolic murmurs and phobias of heart disease without other symptoms or signs. There were 220 cases of uncomplicated effort syndrome; sixty-five "functional" cases with effort syndrome; thirty-nine complicated by premature beats or extrasystoles, twenty by paroxysmal tachycardia, five by functional systolic murmurs and one by marked sinus arrhythmia; sixty cases of pronounced effort syndrome in combination with organic heart disease. In 103 cases, premature beats were found with organic heart disease; there were eighty-nine patients with paroxysmal tachycardia without evidence of organic heart disease. Twenty-eight of them showed premature beats also, and twenty others had well marked effort syndrome. There were forty-three cases of paroxysmal tachycardia showing evidence of organic heart disease. Auricular flutter was found in only eight cases. There were 198 patients with auricular fibrillation, 170 with evidence of organic heart disease, and twenty-eight without. There were 188 cases of angina pectoris. Forty-eight of these showed no evidence of organic heart disease. Twenty-eight cases showed functional systolic murmurs. Thirty-two cases of cardiac neurosis, seven of sinus arrhythmia, six of sino-auricular tachycardia and three of sino-auricular bradycardia are included.

Cardiac Neurosis and Rheumatic Valvular Disease.—Viko reports twenty-three cases in which cardiac neurosis was associated with rheumatic valvular heart disease. Suggestion from an anxious mother in three cases and from a doctor in eight cases were important factors in the development of the neurosis.

Paroxysmal Ventricular Tachycardia.—The five cases reported by Gilchrist illustrated differences not only in the cardiac mechanism during the attacks, but also in their causation. In two, the subjects of advanced myocardial disease with steadily progressing congestive failure, digitalis was the provoking cause of the attacks. The dose of digitalis did not exceed that calculated by the body-weight method of Eggleston. It is concluded that this disorder of rhythm depends more on the state of cardiac nutrition than on the degree of concentration of the drug in the tissues. It is suggested that a mechanism, similar to that which underlies the production of auricular fibrillation by digitalis in heart disease with normal rhythm, may also be present in these cases in which the drug has provoked ventricular tachycardia. In one case, nicotine intoxication was regarded as an important factor in the production of this arrhythmia. Advanced coronary sclerosis and myocardial disease were present in one case, and in the last case no demonstrable cause could be found. Quinidine sulphate was of value in controlling the paroxysms in this case. The prognosis is briefly discussed and emphasis is placed on closely watching the heart rate in all patients with advanced myocardial failure under treatment with digitalis.

Paroxysmal Tachycardia in Hodgkin's Disease.—The clinical course in Graber's case, as confirmed by the necropsy, was one of a rapidly progressing case of Hodgkin's disease. The onset of the paroxysmal tachycardia led him to feel that it might be the result of direct action of the enlarged mediastinal glands on the extrinsic nerves of the heart, either by pressure or edema. At necropsy the vagus nerves were found extensively injured by pressure.

Weight in Young Cardiac Patients.—Gain in weight is regarded by McCulloch as a sign of favorable progress of the convalescence. The weight should, therefore, be recorded regularly in order to anticipate relapses of the rheumatism or heart disease.

Complete Bundle Branch Block.—One hundred and five cases are analyzed by Willius in which electrocardiograms were obtained conforming to those of experimental complete bundle-branch block. From the data available after a critical study of this group, it is not possible to prove the actual existence of lesions involving the bundle branches, as only two deaths occurred during observation. However, the electrocardiograms in these cases so accurately resemble those obtained from experimental lesions, that the presence of bundle-branch lesions in most cases is probable. In ninety-nine cases, the electrocardiograms were of the complete right bundle-branch block type, while in six cases the left branch type occurred.

Supernormal Phase in Conduction in Heart Block.—Two cases of auriculoventricular heart block are reported by Ashman and Herrmann which they believe illustrate the supernormal phase in conduction. The second case, in which the argument for the supernormal is less strong, is of additional interest because of (*a*) the unprecedented length of the P-R intervals, which reach 1.01 seconds; (*b*) the variation in the duration of the rest intervals and of the P-R intervals, permitting the graphic representation of a recovery curve on conductivity, and (*c*) the spreading of the Q R S group and the decrease in the amplitude of the chief ventricular deflection with longer ventricular rest periods.

Electrocardiographic Abnormalities.—Negative T waves in various combinations of leads I, II and III, other than in lead III alone, according to Hepburn and Jamieson warrant a grave prognosis. The mortality figures in their group are comparable to those of other observers. Signs of bundle-branch block would appear to be the most serious electrocardiographic abnormality. The presence of ventricular extrasystoles does not appear to increase the mortality in auricular fibrillation. Low voltage unaccompanied by other electrocardiographic abnormalities is a prognostic sign of serious import.

Rheumatic Mitral Regurgitation and Mitral Stenosis.—Twenty selected cases each of "pure" mitral regurgitation and "pure" mitral stenosis have been studied by Sprague and White by history, physical examination, roentgen ray and

electrocardiogram. A review of the results is given. Mitral regurgitation causes a general enlargement of the heart, as contrasted with the right ventricular and left auricular enlargement due to mitral stenosis. Pure organic mitral regurgitation is a clinical entity but is not demonstrated at necropsy, as it is rarely if ever fatal. This does not, however, decrease its significance, since regurgitation is usually only one state in the process of stenosis which is more often the terminal condition. Under the most favorable conditions, organic mitral regurgitation exists as a potential danger.

Diastolic Hypertension and Increased Basal Metabolism.—All the facts presented by Boas and Shapiro seem to justify the conclusion that patients with diastolic hypertension and augmented heat production present a special syndrome which should be distinguished from exophthalmic goiter as well as from uncomplicated hypertension.

American Journal of Physiology, Baltimore

77: 245-502 (July) 1926

*Copper, Manganese and Zinc Factors in Metabolism of Animals. J. S. McHargue, Lexington, Ky.—p. 245.
Intermittent Pulse in Blood Pressure Investigation. D. T. Barry, Cork, Ireland.—p. 256.
Duration of Systole of Left Ventricle of Man. W. P. Lombard and O. M. Cope, Ann Arbor, Mich.—p. 263.
Pathogenesis of Tetany. L. R. Dragstedt and A. C. Sudan, Chicago.
*V. Prevention and Control of Parathyroid Tetany by Calcium Lactate.—p. 296.
*VI. By Strontium.—p. 307.
*VII. By Oral Administration of Kaolin.—p. 314.
VIII. Effect of Guanidine Intoxication on Blood Calcium of Parathyroidectomized Dogs.—p. 321.
Conditions of Activity in Endocrine Glands. XVII. Evidence for Accessory Accelerator Fibers from Thoracic Sympathetic Chain. W. B. Cannon, J. T. Lewis and S. W. Britton, Boston.—p. 326.
Id. XVIII. Locus of Calorigenic Action of Epinephrine: Tissue Metabolism. H. B. Hunt and E. M. Bright, Baltimore.—p. 353.
Motility of Denervated Mammalian Esophagus. E. J. Jurica, Chicago.—p. 371.
Model to Simulate Mechanism of Emptying of Gallbladder. S. Kodama, St. Louis.—p. 385.
Physiology of Vitamins. IV. Vitamin B in Relation to Gastric Motility. G. R. Cowgill, H. J. Deuel, Jr., N. Plummer and F. C. Messer, New York.—p. 389.
Effect of Physical Exercise on Complex Reaction Time and Auditory Acuity. G. Fellows, G. A. Goldsmith, L. Luenzman, L. Sammons, C. B. Williams and B. W. Zimmerman, Madison, Wis.—p. 402.
Effects of Asphyxia and Isletectomy on Blood Sugar of Myoxocephalus and Ameiurus. W. W. Simpson, Toronto.—p. 409.
Partial Destruction of Sino-Auricular Node by Excision and Ligation. M. C. Borman, Madison, Wis.—p. 419.
Relation of After-Nystagmus to Rotation-Nystagmus. I. Direct Effects of Rotations. G. F. Pilz, San Francisco.—p. 428.
Id. II. Modifying Influences. G. F. Pilz, San Francisco.—p. 443.
Cardiac Output of Dog. I. Normal Unanesthetized Dog. E. K. Marshall, Jr., Baltimore.—p. 459.
*Physiology of Pancreas. I. Subcutaneous Autotransplantation of Tail of Pancreas. A. C. Ivy and J. I. Farrell, Chicago.—p. 474.
Effect of Age on Hemoglobin of Rat. C. S. Williamson and H. N. Ets, Chicago.—p. 480.
"Treppe" (Stair) Phenomenon in Intact Human Skeletal Muscle. L. T. Brown and W. W. Tuttle, Urbana, Ill.—p. 483.
*Effects of Caffeine and Theobromine on Formation and Excretion of Uric Acid. G. W. Clark and A. A. de Lorimier, Berkeley, Calif.—p. 491.

Biologic Potency of Metals.—Rats confined to a synthetic diet and under conditions that were the best that could be improvised at the time gave results which McHargue interprets as indicating that compounds of manganese more definitely and possibly copper and zinc also have important biologic functions in animal metabolism. Moreover, it is assumed that the compounds of these elements as they occur in the natural state in green leaves and seeds of mature plants and the vital organs of animals have a much more active biologic potency than could be expected from feeding equal proportions of a crystalline salt of these metals in a synthetic diet.

Calcium Lactate Controls Parathyroid Tetany.—Dragstedt and Sudan state that adult dogs may be kept alive and in good condition after a complete thyroparathyroidectomy by the oral administration of calcium lactate. Milk, from 500 to 1,500 cc. daily, did not prevent the appearance of parathyroid tetany in adult dogs, nor did it preserve the life of these animals after thyroparathyroidectomy. It was even less effective in a young dog. Milk given in amounts of from 1,500 to 2,900 cc. daily did not control the tetany of pregnancy or lactation. The suggestion is made that the well known ameliorating effect of a diet of cow's milk in parathyroid tetany is more probably due to its content of lactose than to its content of calcium. It is also suggested that the superiority of human milk over cow's milk in preventing infantile tetany is due to its greater amount of lactose and in part due to its decreased amount of phosphate rather than to its calcium content.

Strontium Relieves Parathyroid Tetany.—Parathyroid tetany in dogs may also be relieved by the oral administration of strontium lactate in doses of from 1.0 to 1.5 Gm. per kilogram of body weight. The life of adult dogs following a complete thyroparathyroidectomy has been prolonged by Dragstedt and Sudan for at least twenty-four days by this treatment. Parathyroid tetany in adult dogs may be repeatedly relieved by the intravenous injection of large amounts of a modified Ringer's solution in which strontium chloride has been substituted in place of calcium chloride in the usual formula. The life of adult dogs following a complete thyroparathyroidectomy may be preserved for at least eighteen days by the repeated daily injection of large amounts of this modified solution.

Kaolin Protects Against Parathyroid Tetany.—The oral administration of kaolin in amounts of from 50 to 200 Gm. was found by Dragstedt and Sudan to be effective in controlling parathyroid tetany and in preserving the life of completely thyroparathyroidectomized dogs. It is suggested that this effect of kaolin is due to the adsorption of toxic products of bacterial growth in the gastro-intestinal tract and to the predominance of an aciduric intestinal flora which it brings about. These experiments are interpreted to support the view that parathyroid tetany is an intoxication and that the responsible toxic substances in nonpregnant animals arise chiefly in the gastro-intestinal tract as a result of bacterial proteolysis.

Transplantation of Tail of Pancreas.—A very successful method is described by Ivy and Farrell for the subcutaneous transplantation of the tail of the pancreas in the dog. The transplant produces both the external and the internal secretion of the pancreas.

Effects of Caffeine and Theobromine on Uric Acid.—According to Clark and de Lorimier, after caffeine ingestion there is evidence of an increase in uric acid production. After theobromine ingestion its formation seems to be unchanged, but its rate of excretion is diminished. It seems probable that the increases in uric acid are not due to direct oxidation of these methylated xanthines. Prolonged administration of either caffeine or theobromine seems to depress active excretion on the part of the kidney. There exists no proportional relationship between the amount of drug given and the quantity of uric acid excreted. Under normal conditions, there exists a relationship between the volume of urine and the quantity of uric acid excreted, but under diuretic conditions (other than when produced by uric acid itself) no such relationship is evident. Apparently, uric acid is actively excreted.

American Review of Tuberculosis, Baltimore

13: 479-584 (June) 1926

*Errors in Diagnosis of Tuberculosis in Children. W. E. Carroll, Meriden, Conn.—p. 479.
*Tuberculous Cervical Adenitis. C. B. Gibson, Meriden, Conn.—p. 489.
*Tuberculosis Survey of Extremely Underweight Children. K. H. K Wolfe, Lincoln, Neb.—p. 506.
*Care of Tuberculosis Preventorium Child. E. K. Geer, St. Paul.—p. 524. Clinics and Follow-Up Work After Sanatorium Treatment for Tuberculosis. A. T. Laird, Mopeming, Minn.—p. 529.
*Artificial Pneumothorax: One Hundred and Fifty Cases. P. M. Mattill and M. H. Wall, Oak Terrace, Minn.—p. 538.
Pathways for Nervous Reflexes from Parenchyma of Lung. A. T. Rasmussen, Minneapolis.—p. 545.
Investigation of Acid-Fastness of Tubercle Bacilli. B. Suyenaga, Chicago.—p. 550.

Errors in Diagnosis of Tuberculosis.—Carroll urges that every care and precaution be taken not to "railroad" a patient into a disease that he does not have. Difficulty arises chiefly

in two groups of patients; namely, those who present very few abnormal signs and those who present a great many abnormal signs. In the former group the diagnosis of tuberculosis should not be made unless it is obvious that the patient is suffering from some impairment of health, and then only after other causes have been carefully excluded. In a sturdy, thriving child the diagnosis of clinical tuberculosis is not warranted, even if physical and roentgen-ray examinations justify the diagnosis in a child in poor health. Symptoms are more important than signs. In children who present a great many abnormal physical signs and who, even so, are in good general condition—afebrile, well nourished and strong—some condition other than tuberculosis is probably the causative factor. The same may be said of the child with cough of years' duration who remains in good general condition and of the child with clubbed fingers whose general health leaves little to be desired. Definite clinical entities, other than chronic nontuberculous pulmonary disease, are at times confused with tuberculosis. At least, such has been true in 10 per cent of the patients discharged from the sanatorium in which Carroll is located. Forty-five and six-tenths per cent of patients discharged from this sanatorium were nontuberculous. In 20.7 per cent of cases, there was good cause of one kind or another for recommending the patient for admission. In 24.9 per cent of cases, the patient was admitted under gross error in diagnosis.

Treatment of Tuberculous Adenitis.—In Gibson's opinion tuberculin is of little value in the treatment of tuberculous adenitis. Surgery, in competent and conservative hands, is applicable to a small percentage of cases, after standard nonsurgical procedures have failed, and in cases in which the removal of lymph nodes is of more importance than the possible development of a paralysis. Roentgen-ray treatment has not yet been established on a sufficiently definite basis to warrant conclusions. Heliotherapy is undoubtedly successful in promoting more cures of tuberculous adenitis than can ordinarily be anticipated by other means. The Calot method of treatment by aspiration and injection is highly successful when used in conjunction with general heliotherapy. Whether it is any more successful than simple aspiration, practised in conjunction with heliotherapy, is doubtful. The proper treatment of tuberculous adenitis rests on three points: (1) Alleviation of causative or underlying processes, such as treatment of infecting foci in the tonsils, adenoids or teeth. (2) The establishment of good hygiene, with particular attention to good food, fresh air, rest and exercise. (3) The application of a specific remedial agent, the most satisfactory at the present time being heliotherapy, which may in certain instances be aided by aspiration and in even fewer instances by surgery.

Causes of Underweight in Children.—Examination of several hundred children has convinced Wolfe that the vast majority of underweight children live on a deficiency diet, consisting chiefly of acid-forming food. Almost a perfect negative correlation exists in extremely underweight children between their consumption of an excessive amount of sweets and loss of appetite for vegetables, with the exception of potatoes. A cause-and-effect relationship seems to exist between the radically wrong living habits practiced by underweight children and the high percentage who suffer from the diseases, defects and clinical symptoms considered in this study.

Care of Tuberculosis Preventorium Child.—The measures employed at the Ramsey County Preventorium are: rest in fresh air, supervised activities, a well balanced and adequate diet, prompt eradication of infectious foci, heliotherapy and air baths, tuberculin, open air schoolrooms, child guidance survey and follow-up work.

Artificial Pneumothorax.—Mattill and Wall assert that pneumothorax should be supplemented by thoracoplasty in those patients having no free pleural space. Thoracoplasty should be considered in those cases in which pneumothorax is only partially satisfactory and in those cases in which a permanent collapse is indicated.

Archives of Internal Medicine, Chicago

38: 1-144 (July) 1926

*Insensible Perspiration: Relation to Human Physiology and Pathology. F. G. Benedict and H. F. Root, Boston.—p. 1.
*Rate of Urea Excretion as Test of Renal Function by Modification of McLean's Index. S. Kawahara, Rochester, Minn.—p. 36.
*Gastric and Duodenal Ulcer. M. Sturtevant and L. L. Shapiro, New York.—p. 41.
*Edema: Correlation of Various Findings. M. M. Kunde, Chicago.—p. 57.
*Stenosis of Isthmus (Coarctation) of Aorta; Diagnosis During Life. J. T. King, Jr., Baltimore.—p. 69.
*Rôle of Insulin in Protein Metabolism. N. W. Janney and I. Shapiro, Los Angeles.—p. 96.
*Relative Importance of Systolic and Diastolic Blood Pressure in Maintaining Coronary Circulation. F. M. Smith, G. H. Miller and V. C. Graber, Iowa City.—p. 109.
*Auricular Fibrillation with Regular Ventricular Rhythm and Rate Over Sixty. R. L. Levy, New York.—p. 116.
External Factors Causing Variable Results in Kottmann Reaction. J. Kasanin and E. Knapp, Boston.—p. 129.
Water Metabolism. IV. Sugar Metabolism in Dehydration. E. Andrews, Chicago.—p. 136.

Insensible Perspiration.—Benedict and Root found that the curve of insensible perspiration follows the metabolism curve. When metabolism is high, there is much insensible perspiration; when metabolism is low, there was little insensible perspiration.

Urea Excretion as Test of Renal Function.—Kawahara has found McLean's index practicable as a test of renal function, although for repeated examinations its value is enhanced by the use of Bahlmann's micromethod for urea determination. The procedure is adaptable to clinical use, since it is not necessary to keep the diet constant on account of it. If the index shows a normal value, the protein in the diet need not be so rigidly restricted as otherwise.

Statistics on Gastric and Duodenal Ulcer.—In 7,700 necropsy records, 120 cases of gastric ulcer were found by Sturtevant and Shapiro, of which thirty-four were healed. In the same 7,700 records, forty-four duodenal ulcers were found, of which nine were healed. In five of these cases, the gastric and duodenal ulcers were found together, making a total of 159 cases in which either gastric or duodenal ulcers were found, or both. Seventy-six per cent of the gastric ulcers were found near the pylorus; 12 per cent near the cardia, and 12 per cent in the midgastric zone. Of nine ulcers on the anterior surface, three were near the pylorus. The duodenal ulcers were nearly all in the first portion of the duodenum. In seven cases of multiple ulcer, the second portion was involved. There were two cases of encircling ulcer extended to the second portion.

Edema.—The correlation of elastometer examination, disappearance time for intradermally injected salt solution, urinalysis and nitrogen retention of the blood in edema were studied by Kunde.

Stenosis of Isthmus of Aorta.—Of the four cases of stenosis of the isthmus (coarctation) of the aorta recognized during life reported by King, two were thought to be instances of slight stenosis and two of well marked stenosis or total obliteration of the aorta at about the site of the entrance of the ductus botali. Postmortem reports show that the condition is rarely recognized during life. Symptoms that may occur are palpitation, dyspnea, myocardial insufficiency, nocturia, cramps in the legs and intermittent claudication. The signs that may occur are: (*a*) bilateral pulsation in the interscapular region; (*b*) relatively greater pulsation in the upper extremities than in the lower; (*c*) pulsating, superficial, collateral arteries, coursing obliquely across the back of the thorax, downward toward the spine; dilated intercostal arteries; (*d*) relatively higher blood pressure in the arms than in the legs; (*e*) tendency to higher blood pressure in the right than in the left arm; (*f*) pulsus differens, due to the relative delay of the apex of the left radial pulse and rounding of its apex; (*g*) tendency for the right radial pulse to feel larger than the left, and (*h*) systolic murmurs over areas of intrascapular pulsation, over the collateral arteries, at times over the arch of the aorta anteriorly or over the whole aorta posteriorly.

Insulin Therapy of Nondiabetic Conditions.—Experimental support was obtained by Janney and Shapiro for the extension

of insulin therapy to various nondiabetic conditions, characterized by protoplasmic strain on tissues, such as inanition, trauma and sepsis.

Decreased Coronary Circulation Causes Cardiac Hypertrophy.—Smith et al. assert that the decreased coronary flow associated with the diminished diastolic pressure in aortic regurgitation and arteriovenous aneurysm is probably a significant factor in the development of the cardiac hypertrophy and, later, cardiac failure.

Auricular Fibrillation with Regular Ventricular Rhythm.—Four cases of auricular fibrillation are reported by Levy in which the ventricular rhythm showed periods of regularity, the rate of the ventricles being over 60 per minute. Fifteen similar cases have been found in the literature, in which the ventricular rate was over 55. The regular ventricular rhythm lasted from a few hours to several days. The condition is of diagnostic import in that it may simulate normal (sinus) rhythm.

Archives of Pathology and Laboratory Medicine, Chicago

2: 1-148 (July) 1926

*Distribution of Water and Salts in Human Organs During Fever. E. Pribram, Chicago.—p. 1.
*Ganglioglioma. O. C. Perkins, New York.—p. 11.
*Pathologic Anatomy of Hypophysis. IV. Necrosis and Atrophy. J. P. Simonds and W. W. Brandes, Chicago.—p. 18.
*Leukemia and Central Nervous System. B. M. Fried, Boston.—p. 23.
*Healed Dissecting Aneurysm of Aorta. E. M. Hall, San Francisco.—p. 41.
Cultural Methods for Increasing Number of Spirochaetae Pallidae in Fresh Syphilitic Tissue. L. W. Shaffer, Detroit.—p. 50.

Distribution of Water and Salts During Fever.—Pribram summarizes his paper as follows: During fever the human organism is in a state of thirst. This state of thirst is caused by a change of the distribution of water in the organism. The parenchymatous organs absorb more water, owing to their contents of protein. The causes of the increased demand of water by the parenchymatous organs are of physiochemical nature. The rise of the temperature, the breaking down of proteins and the change of the chemical reaction of the blood (increase of hydroxyl ions) all produce the same effect, an increased faculty of the cell colloids to imbibe water. Proteins take up more water if the temperature rises from 37 to 40 C. Organs not so rich in proteins (the skin, the mucous membranes, the subcutaneous tissue) and the muscles lose water, supplying the inner organs with water. The delivery of water by the muscles may be explained by an exchange of their potassium salts for sodium salts. There is an increase of the quantity of potassium phosphate in the urine and a decrease of sodium chloride. The origin of the potassium salts is doubtless the muscle tissue. This tissue has the faculty of imbibing more water in the presence of potassium salts than in the presence of sodium salts. The loss of water by the skin, the mucous membranes and the subcutaneous tissue cannot yet be explained in a similar manner, but recent articles make it probable that there the nervous system (parasympathetic system) exerts a regulating influence.

Ganglioglioma.—A tumor of the brain is recorded by Perkins for which the name ganglioglioma is suggested because of its richness in mature neurons embedded in a heavy matrix of fibrous-like tissue. The neurons showed great activity, dividing by amitosis. The matrix was abundant and, because of its nonspecificity for differential stains, it is believed to be of glial origin.

Pathologic Anatomy of Hypophysis.—Two groups of lesions in the anterior lobe of the hypophysis of patients dying from acute infections and brain tumor are described by Simonds and Brandes as: (1) localized areas of necrosis in which parenchyma, connective tissue and blood vessels are completely destroyed, probably as a result of infarction; and (2) multiple localized areas in which the epithelial cells have completely or almost completely disappeared, leaving intact connective tissue and greatly dilated blood vessels.

Leukemia and Central Nervous System.—A case of leukemic lymphadenosis is reported by Fried, and thirty cases of leukemic lymphadenosis and myelo-adenosis from the literature, involving the central nervous system, are reviewed. In Fried's case a patient with a subacute leukemic lymphadenosis died of apoplexy, and at necropsy numerous lymphomas and hemorrhages were found in the brain. Grave degenerative changes were found in the interstitial, parenchymatous and mesenchymal elements of the brain, more pronounced in the vicinity of the extravasated blood and also around the lymphomas. These changes are not regarded as peculiar to leukemia, but are ascribed to circulatory disturbances in the brain due to hemorrhages and accumulated masses of lymphoid elements (similar lesions of a minor degree occur in primary and secondary malignant diseases of the brain). In the thirty case reports gathered from the literature, lesions of the nervous system have been reported in the hemispheres in twelve, in the cranial nerves in eight and in the cord in eleven cases, in eight of which spinal degenerations were observed in the absence of lymphomas, in many respects resembling those observed in pernicious anemia.

Healed Dissecting Aneurysm of Aorta.—Hall reports a case of a dissecting aneurysm which developed in the aorta of a youth, aged 17, following a mile race. He lived fifteen years, and during this time was able to compete in strenuous athletic events. A patent ductus arteriosus of small caliber was also present. During the last years of life, all signs of aortic insufficiency could be made out. At necropsy the heart was found enormously enlarged, mainly due to hypertrophy and dilatation of the left ventricle. The tear in the aorta had occurred immediately above the aortic valve, where a saclike aneurysm the size of a man's fist had formed in the walls of the ascending aorta.

Archives of Physical Therapy, X-Ray, Radium, Omaha

7: 379-442 (July) 1926

Application of Radiology and Physiotherapy to Gynecology: V. Electrotherapy. G. E. Ward, Baltimore.—p. 379.
Electrothermic Methods in Treatment of Neoplastic and Allied Diseases. W. L. Clark, Philadelphia.—p. 385.
Effect of Short Wave Roentgen Ray and Gamma Rays on Nasopharyngeal Lymphoid Tissue. J. R. Ranson and S. Withers, Denver.—p. 393.
Autocondensation in Hypertension. F. B. Moor, Loma Linda, Calif.—p. 397.
Surgical Diathermy for Papillomas of Bladder. F. L. Nelson, Ottumwa, Iowa.—p. 405.
Melanosarcoma of Neck Treated by Electrocoagulation. J. W. Duncan, Omaha.—p. 412.

Atlantic Medical Journal, Harrisburg, Pa.

29: 671-738 (July) 1926

Toxemias of Pregnancy. J. E. Talbot, Worcester, Mass.—p. 671.
*Influence of Congenital and Hereditary Factors in Heart Disease. E. Weiss, Philadelphia.—p. 677.
*Congenital and Hereditary Factors in Arterial and Renal Disease. S. S. Leopold, Philadelphia.—p. 681.
*Aberrant Thyroids. J. R. Paul, Philadelphia.—p. 684.
Hermaphrodite. J. A. Betts, Easton, Pa.—p. 686.
Diaphragmatic Hernia in Young Athlete. W. S. Newcomet, Philadelphia.—p. 687.
Mediastinal Tumor. F. B. Utley, Pittsburgh.—p. 689.
Imperforate Hymen, Causing Retention of Urine. F. C. Hammond, Philadelphia.—p. 690.
Prolapse of Uterus Through Ring Pessary, with Strangulation. H. A. Duncan, Philadelphia.—p. 691.
Subacute Pancreatitis, with Cyst and Cholelithiasis. J. L. Lenker, Harrisburgh.—p. 692.
Lymphosarcoma Involving Both Breasts. H. G. Schleiter and A. J. Bruecken, Pittsburgh.—p. 693.
Spasm in Middle of Esophagus. G. W. Grier, Pittsburgh.—p. 696.
Treatment of Eye Traumas. E. B. Heckel, Pittsburgh.—p. 697.
Two Cataract Cases. S. S. Smith, Pittsburgh.—p. 699.
Interstitial Syphilitic Keratitis. T. H. Manley, Jr., Tarentum.—p. 700.
Method of Making Ether Dropper. G. W. Reese, Shamokin, Pa.—p. 702.

Congenital and Hereditary Factors in Heart Disease.—Weiss commends the classification of congenital heart disease made by Abbott, who divides these cases into noncyanotic and cyanotic groups, depending on whether the mechanical disturbance of the circulation produced by the defect leads to a shunt of blood from the arterial to the venous side, or from the venous to the arterial. The noncyanotic group is made up of three principal forms: patent foramen ovale, patent ductus arteriosus and defect of the ventricular septum. All are characterized by latent or slight symptoms and distinct

physical signs. A peculiar harsh murmur of unusual rhythm and intensity frequently accompanied by a thrill, situated in the left upper precordium and often associated with evidences of dilatation of the pulmonary artery, is the most important feature of this group. It is often possible to distinguish the individual form that is present. Prognosis for life is good. The dangers to be guarded against are infection and strain. The principal cyanotic form of congenital heart disease is pulmonary stenosis, often associated with defect of the ventricular septum and dextroposition of the aorta. The symptoms are more important than the physical signs in diagnosis. Congenital cyanosis, clubbing of the fingers, polycythemia, dyspnea and suffocative attacks are the features of this group. Prognosis is not good, but adult life may be reached. Pulmonary tuberculosis and bacterial endocarditis are usually responsible for death.

Hereditary Factors in Kidney Diseases.—Leopold accepts the opinion that with the exception of the known nephrotoxic substances such as uranium and mercury, which invariably produce nephritis, the other etiologic factors are usually contributory and secondary, and the fundamental and primary cause is the quality of tissue which the individual inherits. A case illustrating familial arterial and renal disease is described.

Aberrant Thyroids.—The relative frequency of occurrence of aberrant islands of thyroid tissue in certain sites of predilection in the neck is discussed by Paul, with the attempt to define the median and lateral cervical types as clinical entities. Emphasis is laid on the extremely labile character of thyroid tissue, which is quite prone to undergo hypertrophy and colloid change as a result of physiologic influences, and on the fact that aberrant islands of thyroid are similarly subject to the same influences.

Boston Medical and Surgical Journal

195: 203-252 (July 29) 1926

*Dilution and Concentration Tests of Renal Function. J. H. Pratt, Boston.—p. 203.
Laennec, The Man—1781-1826. W. P. Coues, Brookline, Mass.—p. 208.
Laennec's Clinicopathologic Studies. H. Morrison, Boston.—p. 211.
Laennec's Work on Mediate Auscultation. H. R. Viets, Boston.—p. 213.
Relation of Colon to Abdominal Tumors. J. F. Baldwin, Columbus, Ohio.—p. 217.
Introducing Solutions Subcutaneously. W. Van Hook, Chicago.—p. 219.
Control of Communicable Diseases Prevalent in Massachusetts. Mortality During Past Seventy-Five Years. E. G. Huber, Boston.—p. 220.

195: 253-298 (Aug. 5) 1926

*Cancer and Diverticulitis of Large Intestine. R. H. Miller, Boston.—p. 253.
*Postoperative Massive Atelectasis. M. F. Eades, Franklin, N. J.—p. 258.
*Effect of Light on the Vitamin A Content of Cod Liver Oil. A. D. Holmes and M. G. Pigott, Detroit, Mich.—p. 263.
Control of Communicable Diseases Prevalent in Massachusetts. E. G. Huber, Boston.—p. 266.

Dilution and Concentration Tests of Renal Function.—The dilution and concentration tests are approved of by Pratt because they give important information regarding kidney function. If an abnormal response is obtained, the tests should be repeated once or twice after measures have been taken to remove disturbing extrarenal factors, the chief of which are dehydration of the tissues and an excess of water in the organisms. The tests should be employed in combination with the other functional methods of proved value and interpreted cautiously in the light of all facts that can be gained from the complete clinical study of the case. The tests have been found of distinct value in the detection of partial dehydration and latent edema.

Surgery of Large Intestine.—Five cases are presented by Miller showing difficult and unexpected problems in surgery of the large intestine. He says that, in the presence of indefinite gastro-intestinal symptoms in people of cancer age, the roentgen ray and the examination of the stools for occult blood are very important aids to diagnosis. Exploratory operation is preferable to procrastination. Cancer of the large intestine is, on the whole, favorable for operation. In any case that seems like appendicitis, but in which the symptoms and signs are on the left side, diverticulitis should be suspected. For this, conservatism is preferable to radical surgery.

Postoperative Massive Atelectasis.—It is believed by Eades that bronchial obstruction and weakened respiratory movement in varying combinations produce postoperative massive atelectasis. Three cases are cited.

Effect of Light on Vitamin in Cod Liver Oil.—The results reported by Holmes and Pigott demonstrate that during the storage and distribution of cod liver oil, it should be packed in light-proof containers, such as amber bottles or flint bottles wrapped in paper or cartons, because sunlight destroys the vitamin A potency of the oil.

Florida Medical Association Journal, Jacksonville

13: 1-27 (July) 1926

Eczema in Infancy and Childhood. W. E. Sinclair, Orlando.—p. 1.
Fifty Cases Showing Basal Metabolism Rate 15 Per Cent Below Average Normal. E. W. Bitzer, Tampa.—p. 5.
Outbreak of Smallpox. J. M. Lowrey, Miami.—p. 9.
Myxedema. J. W. Snyder, Miami.—p. 11.
Postoperative Massive Collapse of Lung: Case. J. A. Beals, Jacksonville.—p. 14.
Foreign Bodies in Food and Air Passages. W. J. Knauer, Jacksonville.—p. 17.

Journal of Laboratory and Clinical Medicine, St. Louis

11: 911-1014 (July) 1926

*Organisms Occurring in Two Cases of Erosio Interdigitalis. G. V. Stryker and M. S. Fleisher, St. Louis.—p. 911.
*Calcium Distribution in Blood. P. L. Kirk and C. G. King, Pittsburgh.—p. 928.
Cytomorphosis of Tubercle Bacillus and Other Acid-Fast Micro-Organisms. H. J. Corper, Denver.—p. 936.
*Epinephrine Shown Chemically in Blood: Differentiating Epinephrine from Glucose in Blood. H. Friend, New York.—p. 950.
*Basal Metabolic Rate in Obesity. H. M. Jones, Chicago.—p. 959.
Sarcinae in Psoriasis. M. A. Marcus, Philadelphia.—p. 967.
Rapid Determination of Albumin in Urine. F. B. Kingsbury, C. P. Clark, G. Williams and A. L. Post, New York.—p. 981.
Simplified Technic for Shaffer-Hartmann Method for Blood-Sugar Analysis. E. P. Bugbee and A. E. Simond, Detroit.—p. 990.
Method of Skin Scarification. E. B. Wood, Atlanta, Ga.—p. 993.
Hydrogen-Ion Titration of Culture Mediums and Preparation of Color Standards. B. W. Culver, Ottawa.—p. 994.
Alarm Apparatus for Arnold Sterilizer. J. W. Churchman and L. Siegel, New York.—p. 996.
Mass Cultivation of Gonococci for Vaccine. J. W. Smith, Jr., and B. Cross, Washington, D. C.—p. 999.

Monilia Causes Erosio Interdigitalis.—Two facts emerge from this study by Stryker and Fleisher: first, that *Monilia* may be the causative agent of so-called erosio interdigitalis, and second, that the organisms which appear in the dermatologic lesions may also be found in the feces of the affected individual.

Blood Calcium in Jaundice and Pregnancy.—The total and ultrafiltrable calcium has been estimated by Kirk and King in the blood of seven persons showing evidence of a jaundiced condition. Comparison with normal cases indicates that the percentage of ultrafiltrable calcium found in this condition is below normal. The difference is not thought to be sufficiently great, however, to account for the frequent delayed coagulation. Preliminary indication is given that the ultrafiltrable calcium is low during pregnancy. The use of citrate, oxalate and fluoride as anticoagulants was found to cause a very marked change in the calcium distribution in blood.

Epinephrine Causes "Hyperglycemia."—Epinephrne has been found by Friend in both normal and pathologic blood sugars. He shows that in many cases of apparent "hyperglycemia," epinephrine and not sugar is being estimated.

Basal Metabolism in Obesity.—Jones is of the opinion that many cases of obesity caused by a diet in excess of the normal body's needs (simple obesity) are often incorrectly diagnosed either as hypopituitarism or as hypothyroidism; and that many cases of obesity due to eunuchoidism are also incorrectly diagnosed as cases of hypopituitarism. He says that thyroid extract should never be used in the treatment of any form of obesity in amounts sufficient to raise the basal metabolic rate to more than about 10 per cent plus. Any attempt at reducing the body's energy intake of food, as in "dieting," is promptly compensated by the body's reduction in energy outgo, thus defeating the purpose of the dietary reduction, and too often effectively discouraging the patient with the "dieting" method of treatment for obesity.

Journal of Metabolic Research, Morristown, N. J.

5: 147-363 (April, May, June) 1924

*Nutritive Value of Gelatin. T. B. Downey, Pittsburgh.—p. 147.
Effect of Thyroparathyroidectomy and Parathyroidectomy. XXVII. F. S. Hammett, Philadelphia.—p. 169.
Determining Basel Metabolism of Dogs. M. M. Kunde, Chicago.—p. 181.
*Requirements of Vitamin B in Metabolism of Foods Containing Proteins and Carbohydrates in Varying Proportions. J. A. Collazo, Montevideo, Uruguay, and C. Funk, Warsaw, Poland.—p. 187.
Metabolism of Vitamin B as Food Constituent. J. A. Collazo, Montevideo, Uruguay, and C. Funk, Warsaw, Poland.—p. 195.
*Diastatic Activity. I. Action of Unsaturated Fatty Acids and Soaps on Enzyme Diastase. G. Cameron, Melbourne, Australia.—p. 205.
*Id. II. Action of Bile on Enzyme Diastase. G. Cameron, Melbourne, Australia.—p. 229.
Vitamin Potency of Cod Liver Oils. V. A. D. Holmes, Boston.—p. 251.
Id. VIII. Potency of Haddock Liver Oil. A. D. Holmes, Boston.—p. 259.
*Relief of Diabetic Acidosis by Insulin. E. L. Sevringhaus and H. A. Raube, Madison, Wis.—p. 263.
Influence of Thyroid on Increased Heat Production During Pregnancy and Lactation. D. Marine, A. Cipra and L. Hunt, New York.—p. 277.
*Indican as Influenced by Constipation and B. Acidophilus Therapy in Psychotic Patients. L. Segal, New York.—p. 293.
Microdetermination of Fermentable Blood Sugar. R. J. Wagner, Morristown, N. J.—p. 353.

Nutritive Value of Gelatin.—Gelatin is a protein whose chemical composition and properties preclude its use as the sole or major source of protein in the dietary. When fed in combination with proteins of certain natural food products, such as oats, wheat and barley, Downey says it possesses a decided supplementary value, presumably through its high proportion of the amino-acid lysine; when fed with corn, peas and beans, its cleavage products are of little value. The value of pasteurized whole milk and of ice cream (average of commercial product) for growth and continued health of animals is improved to a marked extent by the inclusion of gelatin. Better nutritional status of females fed on the gelatin-containing diets was reflected in increased reproduction in the rats studied, although successful rearing of young was obtained on only one specific diet. The data indicate that gelatin is well utilized as a protein when fed in conjunction with milk proteins and further that the effects of gelatin as a colloid of the emulsoid type exert a significant influence on digestibility and absorption when ingested with these dairy products with the exclusion of other foods. In these particular diets, the colloidal effect of gelatin may be equal in importance to, if not indeed greater than, its value as a protein.

Need for Vitamin B in Food.—Collazo and Funk state that, on diets free from vitamin B or on diets containing only a sufficient amount for maintenance, no excretion of this substance takes place. Vitamin B appears in the excreta of the pigeon only when a large oversupply is given, and this applies to artificial food mixtures and to the natural dietary as well. Vitamin B, therefore, does not act as a catalyst but is a building stone used up during the metabolic processes. In absence of vitamin B a green color appears in the excreta of the pigeon, a safe sign of deficiency of this substance in the diet.

Action of Oleates on Diastatic Activity.—The action of oleates on the enzyme diastase has been studied by Cameron, and Stock's work is confirmed, thus bringing amylolytic enzymes into line with proteolytic ferments as regards their relationship to oleates. A time factor and concentration factor seem evident. The temperature factor needs elucidation. Saturation of the oleates and the effect of boiling are suggestive of a chemical rather than a physical reaction. Some evidence is presented that there is also a relationship between starch and oleates, possibly of a physical nature.

Action of Bile on Diastatic Activity.—Cameron asserts that "whole" bile increases the diastatic activity of a fluid. This action is due chiefly to the taurocholates, glycocholates and choleates having an inhibitory action. Cholesterol has no action on diastase. Boiling the bile produces no alteration in this action.

Nature of Diabetic Coma.—The comatose condition in diabetes is held by Sevringhaus and Raube to be due directly to lack of ability to oxidize glucose, attributable to absence of a sufficient supply of insulin. This concept of suboxidation due to inability to oxidize glucose seems particularly helpful in explaining the tendency to retarded mental processes which is well known in diabetic patients. It is easily extended to explain the muscular weakness so common in diabetes. The suboxidative factor in coma would not be amenable to treatment with alkali, although it yields promptly to insulin.

Indican as Influenced by Constipation.—More than 500 urinalyses were made by Segal on forty-eight psychotic patients. Twenty-three of these patients were receiving various *B. acidophilus* preparations for the alleviation of constipation; in twenty-five control cases, no treatment was being received. It was apparent that there is no correlation between constipation, as evidenced by infrequency of bowel movements, and indican excretion. Only thirteen instances of abnormal excretion were found. Of these, six occurred in constipated subjects, six in subjects having good daily defecations and one in a patient with diarrhea. The indican excretion is no more affected by a high carbohydrate diet than by one comparatively low in carbohydrate. There was no correlation between the mental condition of psychotic patients and their indican excretion. The ingestion of lactic acid preparations and lactose caused the formation of strongly acid urines. The acidity of the urine was found to vary with the lactic acid-producing ability of the preparation.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

27: 287-354 (May) 1926

*Action of Digitalis on Frog Heart: Modification by Quinidine. M. Cattell, Boston.—p. 287.
Action of Small Doses of Ergotamine on Muscular Response to Stimulation of Sympathetic Nerves. H. V. Van Dyke, Edinburgh.—p. 299.
Effects of Atropine, Physostigmine and Pilocarpine on Cardiac Vagus of Fowl. O. S. Gibbs, Halifax, N. S.—p. 319.
*Effect of Sodium Phenobarbital and Some Other Barbituric Acid Derivatives on Coronary Circulation. IV. C. M. Gruber and S. J. Roberts, St. Louis.—p. 327.
Effect of Epinephrine and Other Vasomotor Drugs on Cerebral Blood Vessels. XVII. C. M. Gruber and S. J. Roberts, St. Louis.—p. 335.
*Effect of Phenobarbital (Luminal) and Some Other Barbituric Acid Derivatives on Cerebral Circulation. V. C. M. Gruber and S. J. Roberts, St. Louis.—p. 349.

Quinidine Modifies Digitalis Action.—Cattell asserts that the speed of digitalis action is slowed by previous exposure of the heart to quinidine solutions. Quinidine added to the digitalis solution was ineffective in delaying the action of the latter drug. Digitalis appears not to modify the action of toxic concentrations of quinidine.

Effect of Barbituric Acid Derivatives on Coronary Circulation.—All the barbituric acid derivatives tested by Gruber and Roberts in dilute solutions produce coronary vasodilatation when injected into the perfusate of an isolated cat or rabbit heart. Concentrated solutions produce variable results. Iso-amyl ethyl barbituric acid, when injected intravenously in saturated aqueous solutions, materially lowers the arterial blood pressure in experimental animals.

Effect of Barbituric Acid Derivatives on Cerebral Circulation.—All the barbituric acid derivatives tested by Gruber and Roberts cause dilatation of the cerebral vessels. Sodium phenobarbital, 50 or 100 mg., when dissolved in Ringer's solution p_H 7.6 modified by the addition of autogenous defibrinated blood to 20 per cent and injected into a perfusate of the same fluid, produced marked cerebral vasodilation. In the brain as in other organs, the barbituric acid derivatives act directly on the vessel wall in producing vasodilatation. The beneficial results from the administration of phenobarbital in epilepsy may be, in part, due to its cerebral vasodilator action.

27: 355-494 (June) 1926

*Iodine Content of Human Cerebrospinal Fluid. D. Campbell and W. R. Snodgrass, Glasgow.—p. 355.
*Effect of Morphine and Other Opium Alkaloids on Muscular Activity of Alimentary Canal. I. Small Intestine. O. H. Plant and G. H. Miller, Iowa City.—p. 361.
Toxicity of Mercuric Salicylate for Rabbits. G. E. Wakerlin and A. S. Loevenhart, Madison, Wis.—p. 385.
*Point of Attack of Pituitary Extract and Histamine on Smooth Muscle. D. I. Macht, Baltimore.—p. 389.
*Plexus Free Preparations of Small Intestine: Their Rhythmicity and Response to Drugs. H. S. Gasser, London.—p. 395.

*Lymph Alterations Following Arsenic Injections. W. F. Petersen and T. P. Hughes, Chicago.—p. 411.
Influence of Thyroid Feeding on Chronic Morphine Poisoning. E. M. Scarborough, London.—p. 421.
Pharmacologic Action of Sparteine and Related Alkaloids. I. Sparteine and Oxysparteine. R. S. A. Heathcote, Cairo, Egypt.—p. 431.
*Pharmacologic Properties of Periplocin. M. H. MacKeith, Oxford, England.—p. 449.
Biologic Significance of Cystine and Glutathione. I. Mechanism of Cyanide Action. C. Voegtlin, J. M. Johnson and H. A. Dyer, Washington, D. C.—p. 467.

Iodine Content of Cerebrospinal Fluid.—The results obtained by Campbell and Snodgrass show that it is possible to produce and to maintain a definite increase in the iodine content of the cerebrospinal fluid by the administration of potassium iodide by mouth, and that this concentration can be markedly increased by the administration of sodium iodide intravenously. It is suggested by the authors, therefore, that at some period in the treatment of syphilis of the central nervous system a series of intravenous iodide injections can be employed usefully, but the more powerful intermittent action of intravenous iodide must be maintained throughout by the ordinary oral administration. Arsphenamine substitutes can be dissolved in the sodium iodide solution, so that only one intravenous injection is necessary, when iodide is combined with organic arsenic medication.

Effect of Morphine on Alimentary Canal.—The results reported by Plant and Miller are directly opposed to the current conception that morphine decreases intestinal activity—a conception that frequently forms the basis of its clinical use. Yet some of the uses of morphine and the results obtained are more easily explained on a basis of increased tone and contractions. This applies to intestinal hemorrhage and to diarrheas accompanied by relaxation, as well as conditions in which distention and pain are due to loss of tone. The relief of many forms of intestinal pain of diarrhea and the production of constipation by morphine cannot be explained on the basis of these results alone. Other factors are concerned, such as effects on the central nervous system (pain perception), on the stomach and lower bowel and on secretion and absorption.

Effect of Pituitary Extract and Histamine on Muscle.—The results of Macht's experiments point to the fact that both pituitary extracts and histamine produced the same effects on the muscular contraction of the fundus and the trigone of the bladder and acted directly on muscle substance and not on nerve terminals. This would tend to give additional evidence to that already adduced by Abel and his collaborators in regard to the nature of the pituitary principle.

Response of Auerbach's Plexus to Drugs.—Additional evidence is presented by Gasser that Auerbach's plexus is not necessary for pendular movements of the small intestine and that, with the exception of nicotine, certain alkaloids and bases produce their effects by direct action on the muscle fibers and not through the plexus.

Effect of Arsenic on Lymph Vessels.—The lymph experiments made by Petersen and Hughes offer some evidence that arsenic injections cause alterations in the permeability of the capillaries. With small doses there is first an increase in permeability (stimulation) seemingly involving only water exchange. This is followed by a diminution that may persist for a period of several hours and probably coincides with the period of water retention commonly observed with arsenic medication. Solution of potassium arsenite (Fowler's solution) stimulates the endothelium. With small doses the effect is rapidly reversed. With larger doses the reversal is not so apparent and an increased lymph flow, with increased protein, sugar, phosphates and bile may continue for a considerable period of time.

Action of Periplocin.—Periplocin is a glucoside occurring in *Periploca graeca*, a plant which belongs to *Asclepidea*, and which is indigenous to the Black Sea districts. MacKeith asserts that it deserves a place in the digitalis group of glucosides, for it has the properties characteristic of that group, in that it increases the tone and the contractility of cardiac muscle and the tone of arterial muscle, while excessive doses produce cardiac irregularity and systolic arrest of the heart. The only point in which periplocin differs significantly from the other members of the digitalis group is in its small (or absent) stimulant effect on the vagus center.

Maine Medical Association Journal, Portland

17: 115-129 (July) 1926

Treatment of Suppurative Conditions of Lung. W. Whittemore, Boston.—p. 117.

Medical Journal and Record, New York

124: 129-188 (Aug. 4) 1926

Allergy. E. M. Robinson, New York.—p. 129.
Diverticulum of Cardia of Stomach. F. Pearlstein, West New York, N. J.—p. 134.
*Diagnostic Value of Hypo-Acidity. W. W. Sager and H. R. Hartman, Rochester, Minn.—p. 136.
Gallstones. E. L. Kellogg, New York.—p. 138.
Rejuvenation. M. W. Thewlis, New York.—p. 140.
Affections of Epiphyses Peculiar to Second Decade. I. Balensweig, New York.—p. 144.
Psychologic Factors in Treatment of Disease, Especially Paralyses in Childhood. H. Keller, New York.—p. 148.
Factors Facilitating Epileptic Seizures. A. Gordon, Philadelphia.—p. 151.
Use of Sedatives, Tonics, Endocrines, Etc., in Reeducational Training Treatment of Epileptic. L. P. Clark, New York.—p. 154.
Pedophilia. E. E. Hadley, Washington, D. C.—p. 157.
Treatment of Psychoneuroses by Removal of Focal Infection. E. C. Dudley, Chicago.—p. 162.
Neurosis and Total Personality. F. Alexander, Berlin.—p. 165.

Hypo-Acidity.—Four hundred and twenty cases in which hypo-acidity was present were analyzed by Sager and Hartman, all other factors being disregarded. One hundred and fifty-eight cases were of functional nervous disease. There were sixty-seven cases of cholecystitis; seventeen of unquestioned malignant disease; twenty-eight of peptic ulcer; eighteen of chronic constipation; eleven of appendicitis, and thirteen of syphilis. No cases of pernicious anemia were found. The remaining cases were scattered and probably only accidental, having no relationship to the hypo-acidity other than a coincidental one.

Military Surgeon, Washington, D. C.

58: 593-704 (June) 1926

Malarial Fevers in U. S. Army and at Selected Stations. A. G. Love.—p. 593.
Trachoma in Russia. W. R. Dear.—p. 611.
Medical Service in France. B. K. Ashford.—p. 620.
Experimental Field Office Set. J. P. Fletcher.—p. 636.
Dermatitis Herpetiformis: Case. A. A. McDaniel.—p. 662.

Occupational Therapy and Rehabilitation, Baltimore

5: 1-80 (Feb.) 1926

Vocational Aspect of Occupational Therapy. H. J. Kefauver, Washington, D. C.—p. 1.
National Program of Vocational Rehabilitation of Disabled Civilian. J. A. Kratz, Washington, D. C.—p. 25.
Occupational Therapy as Applied to Orthopedic Cases. J. D. Adams, Boston.—p. 35.
Developing Rochester's Community Workshop. R. H. Greeman, Rochester, N. Y.—p. 43.
Sale of Occupational Therapy Products Without Commercializing Department. B. E. Lindberg, St. Paul.—p. 55.

Ohio State Medical Journal, Columbus

22: 585-656 (July) 1926

Shall Cancer be Treated by Radiation or Surgery? H. J. Means, Columbus.—p. 589.
Value of Blood Settling Time in Diagnosis, Prognosis and Treatment. C. DeCourcy and O. Thuss, Cincinnati.—p. 593.
*Use of Sodium Ricinoleate Toxin (Larson) in Immunization Against Scarlet Fever. R. G. Perkins and E. Megrail, Cleveland.—p. 599.
Economic and Social Aspect of Venereal Disease. G. F. McKim and P. G. Smith, Cincinnati.—p. 601.
Heredity and Sterilization. F. L. Rhodes, Massillon.—p. 604.
Social and Economic Problems Affecting Medical Practice. L. L. Bigelow, Columbus.—p. 606.

Immunization Against Scarlet Fever by Sodium Ricinoleate.—In a series of 1,500 children of various ages, examined by Perkins and Megrail, 361 were found susceptible by the Dick test, by the use of two test toxins, checked against each other, of known susceptibles and insusceptibles. Among sixty-six susceptible adults, eight showed a negative Dick test from three to six weeks after a single dose of 3,000 units of Larson toxin. Among the 324 children available for retesting,

210 gave a negative Dick test from two to five weeks after 3,000 units of Larson toxin, while sixty-two others showed faint or doubtful reactions.

Philippine Islands Medical Association Journal, Manila

6: 183-210 (June) 1926

Public Health Value of Kahn Precipitation Test: Yaws. E. V. Pineda and H. W. Wade, Culion.—p. 183.
*Horse Serum Treatment of Carbunculosis and Similar Affections. F. G. Kee and J. Santillan, Manila.—p. 188.
Ankylostomiasis. III. Hookworm Counts and Classification Among Hospital Patients. C. Manalang, Zamboanga.—p. 192.
Congo Red and Hydrochloric Acid or Nitric Acid Fuming Method for Treponema Pallidum Examination. L. Udasco, Manila.—p. 196.

Horse Serum Treatment of Carbunculosis.—Kee and Santillan have given horse serum by intravenous injection to eleven patients with carbuncles or furuncles. When the lesions have been of small size they have given more than three injections. Twenty-four hours after the first injection, the edges of the wound usually become inflamed—raised, warm and reddened. After the second injection usually the inflammation subsides; the fever which may be present on admission drops, and a sharp line of demarcation between the sound and the dead tissue is formed. Then finally the slough falls off, leaving a healthy granulating cavity. Then balsam of Peru is applied daily. No untoward effects have been experienced thus far in giving the injection, except that sometimes a slight feeling of weakness, dizziness and nausea follows. These sensations subside, however, within from ten to fifteen minutes. The fever that occasionally appears after the injection was never of an alarming character and subsided after twenty-four hours. Pain, which is an important subjective symptom, is usually markedly relieved after forty-eight hours.

Philippine Journal of Science, Manila

30: 153-274 (June) 1926

Hugh Cuming's Letters to Sir William J. Hooker. E. D. Merrill, Berkeley, Calif.—p. 153.
Stony Layer of Coconut (Cocos Nucifera Linnaeus). J. B. Juliano, Los Baños, Laguna.—p. 187.
Deodorization of Coconut Oil. W. L. Brooke, Manila.—p. 201.
Mineral Cordage Oils. W. L. Brooke, Manila.—p. 213.
*Blood Chemistry in Leprosy. I. Nonprotein Nitrogenous Substances, Sugar and Chloride. E. M. Paras, Culion Leper Colony.—p. 219.
Collembola from Philippines and New Caledonia. E. Handschin, Basel, Switzerland.—p. 235.
Diocalandra Taitensis (Guerin) and Other Coconut Pests of Fanning and Washington Islands. W. B. Herms, Berkeley, Calif.—p. 243.

Blood Chemistry in Leprosy.—A study of the results collected by Paras by chemical analysis of the blood of 100 lepers brings out the following facts: No regular correspondence can be traced between the blood examination and the duration, extent, or type of leprosy, or the antileprosy treatment. The average values for nonprotein nitrogen, uric acid, creatinine, and sugar for all of the leper groups were somewhat high, although many individual cases showed normal values. The average values for nonprotein and urea nitrogen are markedly high, not only in the group of lepers with nephritis, but also in the group with lepra reactions. The group averages for urea nitrogen are normal except as stated above, and those for chloride are normal throughout.

South Carolina Medical Association Journal, Greenville

22: 119-138 (June) 1926

*Hypertrophy of Prostate: Intussusception. W. B. Sparkman, Greenville.—p. 120.
Diet and Nutrition of Child. W. Weston, Columbia.—p. 121.
Etiology and Symptomatology of Hyperthyroidism. R. Wilson, Charleston.—p. 127.
Colored Female Roper Hospital. T. E. Bowers, Charleston.—p. 131.
Importance of Ophthalmic Aspects of General Medicine. E. Jackson, Denver.—p. 134.

Multiple Intussusception.—The intussusception in Sparkman's case began at the cecum, the ileum being invaginated together with the cecum and the appendix, the intussusceptum extending clear down into the rectum. Another intussusception in the opposite direction was present at the splenic flexure, about 8 inches (20.32 cm.) of descending colon being invaginated into the transverse.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Japanese Surgery, Kyoto

3: 1-200 (July 20) 1926

Nervous Control Over Blood Flow and Metabolism in Peripheral Tissues, Warmed or Cooled by Application of External Heat or Cold. Y. Hori.—p. 1.
Effect of Sympathectomy on Muscle Atrophy Result of Constricting Dressings. K. Iwata.—p. 74.
Skiagram of Duodenum. S. Nakagawa and T. Yuki.—p. 79.
Change in Blood Flow in Extremities as Result of Interruption of Peripheral Nerve Conduction. S. Yoshitomi.—p. 86.
Influence of Resection of Ganglion with Sympathetic Trunk on Consolidation of Fracture. S. Uno.—p. 106.
Distribution of Nonmedullated Fibers in Peripheral Nerves and Their Bilateral Crossing. N. Yamasaki.—p. 122.

British Journal of Dermatology and Syphilis, London

38: 273-322 (July) 1926

*Lupus Erythematosus with Acute Exacerbation; Erysipelas and Phlegmon Capitis Followed by Death. H. Sundt.—p. 273.
*Concurrent Herpes Zoster and Varicella. A. C. Roxburgh and P. H. Martin.—p. 286.

Lupus Erythematosus in Child.—Sundt's patient, a child, exhibited a pronounced degree of lupus erythematosus without any tuberculosis in its nearest relations and with no tuberculous antecedents. The disease, after being present for five years, suddenly, for some cause or another not yet clear, took a grave turn and made very rapid progress. A severe erysipelatous inflammation led to coma and death, and at the postmortem examination no sign of present or past tuberculosis could be discovered.

Concurrent Herpes Zoster and Varicella.—Roxburgh and Martin relate the case of a man, aged 41, who developed a pronounced eruption of herpes zoster on the left side of his neck and head in areas supplied by the second and third cervical nerves. A few days later, a few vesicles appeared on the trunk and one or two on the legs. These were diagnosed as varicella eruptions. Recovery was uneventful. During the period of prodromal pain, the patient was spending the weekend with friends. Some hours before he left, a girl, aged 18, arrived, who from then on occupied the bedroom in which the patient had slept. Fourteen days later, she developed typical varicella with extensive distribution, including the scalp and palate. She had had neither herpes zoster nor varicella before or, as far as she is aware, had she been in contact with any case of varicella. Fifteen days later a child of 3½ years living in the house also developed varicella.

British Journal of Radiology, London

31: 239-282 (July) 1926

Radiologic Exploration with Iodized Oil. J. A. Sicard and J. Forestier.—p. 239.
Chronic Intermittent Duodenal Stenosis. N. Ratkoczi.—p. 253.
Present and Future of Radium and Roentgen-Ray Treatment. F. Tomanek.—p. 255.
Treatment of Leukemia by Prolonged Radiation. F. Tomanek.—p. 257.
Stimulating Dose. E. H. Zweifel.—p. 259.
Practical Application of Encephalography. S. Fraenkel.—p. 264.
Effect on Cell in Isolated Radiation of Blood. S. Fraenkel.—p. 266.
Action of Ultraviolet and Luminous Rays in Therapy. C. Sonne.—p. 268.

British Medical Journal, London

2: 103-144 (July 17) 1926

Insulation of Nervous System. W. Trotter.—p. 103.
Spirochetosis Icterohemorrhagica in Norfolk. F. W. Burton-Fanning and A. J. Cleveland.—p. 108.
*Thyroid and Manganese Treatment of Pneumonia. H. W. Nott.—p. 109.
Mastoiditis Complications. W. M. Munby anad R. E. Jowett.—p. 111.
Epidemic Encephalitis with Severe Involvement of Spinal Cord. J. A. Wright.—p. 115.
Collosol Manganese in Furunculosis. M. L. Young.—p. 115.
Quinine Poisoning. H. Gooch.—p. 115.
Poisoning by Tobacco Applied to Skin. J. Ritchie.—p. 116.

2: 145-176 (July 24) 1926

Medical Practitioner and Public. R. G. Hogarth.—p. 145.
Prevention of Insanity. G. M. Robertson.—p. 151.
Dark-Ground Illumination of Tissue Cells Cultivated "In Vitro." T. S. P. Strangeways and R. G. Canti.—p. 155.
Reducing Certain Dislocations of Shoulder. V. Newton.—p. 157.

Thyroid and Manganese Treatment of Acute Pneumonia.—The solution used by Nott is made by adding 2 grains

(0.13 Gm.) of pure potassium permanganate to 1½ pints of water, which should be comfortably hot. From 3 ounces to half a pint are used on each occasion, according to the age of the patient. The fluid should be administered very slowly by means of a funnel and small tube, or by a Higginson's syringe, and the injections repeated from two and a half to four hours during the first twenty-four to thirty-six hours. The length of the interval between the injections depends on what day of the disease the case comes under treatment, much in the same way as the dosage and frequency of the subcutaneous injections of serum are judged in the treatment of diphtheria. In ordinary cases, if the treatment is begun on the first or second day of the disease, intervals of three or four hours can be allowed; but when beginning on the fourth or fifth day, especially when the symptoms are severe, the intervals may be reduced to two and a half or even two hours. One must be guided also by the quantities the patient is able to retain on each occasion, shorter intervals being necessary when the fluid is quickly returned. Once the temperature reaches normal in adults and older children, the injections are reduced to two a day for three days, and once a day for three more days, when they can be discontinued; or they can be replaced to the advantage of some by giving the combined thyroid and manganese cachets for a week or so. But in infants and younger children, the injections should be continued twice daily for at least ten days after the temperature has reached normal, as there is a tendency to recurrence if they are given up too early.

China Medical Journal, Shanghai

40: 603-698 (July) 1926

Blood-Sucking Arthropods of Medical and Veterinary Importance in China. W. S. Patton—p. 603.
Smallpox. E. L. Marsh.—p. 613.
Neuropsychiatry in China. J. L. McCartney.—p. 617.
Biochemical Trend in Medicine. F. R. Dieuaide.—p. 627.
*Determination of Fat in Soy Bean Milk. A. A. Horvath.—p. 631.
Sex-Ratio at Birth of Chinese. F. Oppenheim.—p. 634.
Blood Pressure of Healthy Individuals in Shaohing. Y. Y. Ying.—p. 641.
Case of Amebiasis of Lung. G. A. M. Hall.—p. 644.
Problems of Tracheobronchoscopy and Esophagoscopy. T. Matsui.—p. 646.
Training of Midwives. E. Rowley.—p. 655.
Bronchospirochetosis. L. S. Huizenga.—p. 658.

Determination of Fat in Soy Bean Milk.—A new method for the determination of fat in soy bean milk is presented by Horvath. It consists in autoclaving the soy bean milk in an equal volume of a 20 per cent sodium chloride solution, followed by determination of the fat by the Babcock method.

Edinburgh Medical Journal

33. 466-532 (Aug.) 1926

Failing Heart. J. Cowan.—p. 465. (To be Cont.)
*Cleft Sternum and Ectopia Cordis. D. M. Greig.—p. 480.

Cleft Sternum and Ectopia Cordis.—The literature on this subject is reviewed by Greig. In eight cases out of thirty-eight that exclude the twenty cases of simple cleft sternum, extensive malformation of the heart and large blood vessels existed. In one case the heart was trilocular, the atriums forming one cavity, and in one case the trilocular heart had a single ventricle. In three cases, two described by Breschet and one by Wilson, the heart was bilocular, and it is astonishing that these children survived birth seven days, one month, and six weeks, respectively, while the two children with trilocular hearts survived only four hours and twenty-four hours. In no fewer than six of these serious heart derangements were there two superior venae cavae present. In four instances the combination of a small aortic opening associated with a perforation at the base of the interventricular septum and a large opening for the pulmonary artery indicated a defective development of the bulbus cordis as described by Keith.

Fukuoka Medical Journal, Fukuoka, Japan

19: 467-589 (July) 1926

Experimental Investigations on Surgical Treatment of Nephritis. K. Tokuyama.—p. 590.
Partition of Sodium Chloride and Residual Nitrogen in Experimental Kidney Lesions in Guinea-Pigs. Y. Morihisa.—p. 590.

Irish Journal of Medical Science, Dublin

6: 345-392 (Aug.) 1926

Fats and Fat-Soluble Vitamins. W. J. E. Jessop.—p. 349.
Treatment of General Paralysis of Insane by Malaria. G. Bewley.—p. 358.
Italian Surgery. S. Pringle.—p. 365.
Danger of Sepsis About Lips. W. I. de C. Wheeler.—p. 369.
Fracture of Scaphoid. A. B. Clery.—p. 372.
Multiple Myomas of Abdomen Originating in Colon. H. S. Meade.—p. 373.

Japan Medical World, Tokyo

6: 49-78 (March 15) 1926

Action of Ammonia on Lungs. II. A. A. Horvath.—p. 49.
*Prophylaxis of Kakke (Beriberi); Kakke of Chosenese. K. Shiga.—p. 59.
Toxic Action of Sarcosporidiotoxin. S. Sato.—p. 62.
Biochemical Racial-Index of Ainu, Gilyak and Orokko in Karafuto (Saghalien). T. Kishi.—p. 65.

Kakke.—Kakke is a metabolic disease due to the absence of vitamin B in food. The fact that all the cardiac signs of kakke are reproduced in the experimental condition of avitaminosis seems to indicate, in Shiga's opinion, the existence of identity of etiology as well as the essential nature of both conditions.

Journal of Anatomy, London

60: 345-492 (July) 1926

Innervation of Heart. H. H. Woollard.—p. 345.
Asymmetry in Hermaphrodite Pigs. J. R. Baker.—p. 374.
Description of Human Embryo of Twenty-Two Paired Somites. A. Girgis.—p. 382.
Frenula Valvulae Coli. A. H. Rutherford.—p. 411.
Abnormality of Occipital Bone: Abnormal Bony Formation Surrounding Foramen Magnum. C. F. T. East.—p. 416.
Example of Muscle Scalenus Minimus. L. R. Shore.—p. 418.
Case of Multiple Anomaly of Phalanges of Hands in Girl Aged 15. L. R. Shore.—p. 420.
Mammalian Oculomotor Nucleus. W. E. Le Gros Clark.—p. 426.
Development of Brain of Brown Bear. R. Anthony and J. Botez.—p. 449.
Fusion of Carpal Elements. A. E. Cave.—p. 460.

Journal of Tropical Medicine and Hygiene, London

29: 145-156 (May 15) 1926

Case of Bronchomycosis. N. Chyurlia.—p. 145.
*Leprosy in Fourteen Months Old Child. E. A. Neff.—p. 146.

Leprosy in Child.—Neff reports the case of a child whose mother had a particularly active nodular leprosy which had not responded to treatment. The confinement was normal, as was the puerperium. Almost immediately following her confinement, the mother had a very severe reaction with fresh and extensive infiltration of the skin. This was followed shortly by two or three milder reactions. On account of the child's delicate state of health during this time, she was allowed to nurse it until this was precluded on account of leprotic infiltration of the nipples. When the child was 14 months old, a papulonodule was noticed in the center of her left cheek. Smears showed all fields filled with acid-fast bacilli in characteristic grouping. Nasal smears were negative. Under treatment the disease has remained stationary and inactive, and bacteriologically negative. The initial nodule shows as a typical scar.

29: 169-184 (June 15) 1926

Analysis of Sprue Stools. H. B. Newham.—p. 169.
*Leptospira: New Habitat of Free-Living Forms. A. C. Coles.—p. 170.
Bilharzia Problem in South Africa. F. G. Cawston.—p. 177.

Detection of Living Leptospira.—Coles describes a rapid and easy method of detecting living *Leptospira*. The only real difficulty is to clean the slide so thoroughly that a drop of water can be spread over its surface. For this purpose he keeps on the table a pot of paste made up of whiting (pulv. cretae prep.) and water, and rubs this on the surface of the slide, and then polishes it with a clean cloth. If the method is successful the water will spread over the surface in a thin and uniform layer. If, as often happens, the water runs up into tenticular globules, it is impossible to examine. On one slide, a mark is made with a grease pencil toward the end. This slide is placed on the stage of the microscope, which may be inclined at a comfortable angle. With the 8 mm. objective

and ocular no. 2, a good, dark background is obtained, with the tube of the microscope pulled out to the correct extent for an uncovered object. When everything is in adjustment, the slide is removed. On this slide or on another clean one, a drop of the material containing *Leptospira* is spread in as thin a film as possible. This is examined at once under the dark ground obtained as above by a dry condenser with a stop and bull's eye, and the spirochetes will appear remarkably clear and sharp, much better than when examined with a coverglass and shorter tube. Coles' observations seem to point very clearly to the fact that *Leptospira* are present in the damp, dead, decaying leaves as such, and not in a spore or granule stage only. *Leptospira* disappear from the infusion as soon as bacterial and other putrefactive changes occur.

29: 185-200 (July 1) 1926

Malaria Control. W. E. Deeks.—p. 185.
Gongylonema of Cattle. H. A. Baylis.—p. 194.
Epidemic of Cholera Among Ballast Train Coolies in Bengal. E. N. D. Repper.—p. 196.

29: 201-216 (July 15) 1926

Mycologic Method to Identify Various Sugars and Other Carbon Compounds. A. Castellani and F. E. Taylor.—p. 201.
*Prevention and Treatment of Cholera by Essential Oils. J. W. Tomb.—p. 210.

Treatment of Cholera by Essential Oils.—The mixture of essential oils recommended by Tomb for the treatment of cholera contains 5 minims (0.3 cc.) each of oils of anise, cajaput and juniper, 15 minims (1 cc.) of aromatic sulphuric acid and 30 minims (2 cc.) of spirit of ether. The dose is 1 drachm (4 cc.) every half-hour or one-half drachm (2 cc.) every quarter-hour in water until 1 ounce (30 cc.) has been given, and thereafter 1 drachm every hour until complete recovery has taken place. From the records of hundreds of cases treated by Tomb during the last three years it is stated that if administered according to directions before collapse has set in, the mixture is capable of curing 95 per cent of cases, intravenous isotonic saline injections alone or combined with alkalis in the form of sodium bicarbonate, 160 grains (10 Gm.) to the pint (475 cc.), as recommended by Sellands, being necessary in those cases only in which for any reason collapse ensues.

Lancet, London

2: 107-160 (July 17) 1926

Insulation of Nervous System. W. Trotter.—p. 107.
*Immunity in Relation to Transplantable Malignant Tumors. T. Lumsden.—p. 112.
*Psychic Traumas (Mental Accidents). A. E. Davis.—p. 117.
*Torsion of Gallbladder. G. P. B. Huddy.—p. 120.
Cases of Long-Standing Drug Addiction. S. Park.—p. 121.
Case of Acholuric Icterus. G. Hadfield and T. F. Hewet.—p. 121.
Acute Intussusception in Adult. F. W. Widgery.—p. 122.

Immunity in Relation to Transplantable Malignant Tumors.—It is confirmed by fifty cases in rats studied by Lumsden that when a rat bears a J. R. sarcoma on each hind foot, the cure of one by injection of antiserum is invariably followed by the regression of the other untreated tumor. Such a rat is absolutely immune to J. R. sarcoma, and test inoculations do not produce tumors, yet sarcoma cells grow freely in vitro in the serum of such a rat even when by repeated weekly injections the animal has been "hyperimmunized." If the tissues (spleen, testis, salivary gland) of such a hyperimmunized rat are cultured in the same drop of this rat's serum as a fragment of sarcoma, both normal and malignant cells flourish and intermingle without apparent harm to either. Malignant cells were found to be more susceptible than any of the normal tissue cells to each of the antiserums tested (except to antirat kidney serum). The serum of many normal rabbits was found lethal to cancer cells, and only to a lesser degree injurious to normal mouse tissues.

Psychic Traumas.—As against Freud's dogmatic determinism, Davis advances his theories as to the causation of the great majority of neuroses. 1. The unbearable idea or wish arises in consciousness, and not in the unconscious or in the infantile sexual. 2. The unbearable idea is not repressed into the unconscious by an intrapsychic censor. It is deliberately suppressed by conscious effort into the subconscious—into present unawareness—not deeper. 3. When the complex is laid bare, it is evident that the patient must have been aware of it at some period, if not throughout. 4. The causes are therefore to be sought for in adult life, or in youth, rarely in childhood, and only exceptionally, if ever, in infantile sexuality. 5. The majority of neuroses are founded on moral or physical fear. 6. The fear may be an instinctive protective reaction. 7. The fears are frequently due to external causes (chance) and may be described as psychic traumas or mental accidents.

Torsion of Gallbladder.—The thirteenth case of torsion of the gallbladder now on record is reported by Huddy. The diagnosis in this case had been abscess of the appendix.

Medical Journal of Australia, Sydney

2: 1-32 (July 3) 1926

Some Heterodox Opinions. A. E. Taylor.—p. 1.
Application of New Definition of Normal Labor to Clinical Study of Obstetrics: New Outlook on Midwifery. M. C. De Garis.—p. 6.
Acne Vulgaris. E. H. Molesworth.—p. 10.
Three Cases of Paratyphoid Fever. R. J. W. Smith and G. W. Ashton.—p. 12.
Ureteritis Cystica. J. B. Cleland.—p. 13.
Amyotonia Congenita. K. A. Stephenson.—p. 13.
Case of Acute Myelitis. W. P. White.—p. 14.
Cerebral Fat Embolism. I. H. Cowling.—p. 14.

Medical Journal of South Africa, Johannesburg

21: 295-326 (June) 1926

Gynecology in General Practice. R. W. B. Gibson.—p. 296.
Gonorrhea in Male. B. Bernstein.—p. 301.
Enteric Fever. Pathology and Bacteriology. A. S. Strachan.—p. 306.
Id. Symptoms and Treatment. A. Bloom.—p. 307.
Id. Manifestations Peculiar to Natives. A. Frew and H. T. H. Butt.—p. 309.
Id. Public Health Aspect. A. J. Milne.—p. 311.
Cancer. L. Gordon.—p. 314.

National Medical Journal of China, Shanghai

12: 203-277 (June) 1926

*Ovarian Cysts (Excluding Dermoids). J. S. Chu.—p. 203.
Bismuth Treatment of Neurosyphilis. C. H. Tyau.—p. 222.
Arsphenamine and Neo-Arsphenamine Reactions: Side Effects and Their Managements. T. L. Li.—p. 232.
*Fracture of Elbow: Forty Cases. L. Woo.—p. 240.
*Acidosis Following Calcium Chloride Therapy. C. H. Chien.—p. 246.

Ovarian Cysts.—Three cases are reported by Chu: (1) a huge, twisted, multilocular ovarian cyst, with marked ascites; (2) a totally adherent, multilocular ovarian cyst, and (3) resection of a follicular cyst during pregnancy, without interruption of the pregnancy.

Fracture of Elbow.—The forty cases analyzed by Woo represent an incidence of 4 per cent of all fractures. The most frequent type was the supracondylar, of which there were seventeen cases. Good results from treatment are reported in thirty-eight cases.

Acidosis Following Calcium Chloride Therapy.—In a case of chronic nephritis, probably of the interstitial type, associated with arteriosclerosis, hypertension and myocardial insufficiency, reported by Chien, prompt diuresis and temporary clinical improvement followed the administration of calcium chloride, corroborating what has been claimed for this drug; namely, that it is a valuable diuretic.

Sei-I-Kwai Medical Journal, Tokyo

45: 1-22 (June) 1926

Changes in Hypophysis Induced by Early Castration of Rats. S. Nukariya.—p. 1.
Metabolism of Rana Nigromaculata. H. Nagaoka.—p. 15.
Active Principle of Heidenhein's Lymphagogue of First Class. K. Aoki.—p. 17.
Bioluminescence. II. Nature of New Luminous Bacterium, Microspira Phosphoreum (Yasaki). Y. Yasaki, M. Nishio, A. Ichikawa, R. Majima and O. Ishikawa.—p. 20.
Studies on Secretion. T. Nishikawa.—p. 22.

Tubercle, London

7: 473-520 (July) 1926

Treatment of Pulmonary Tuberculosis by "Sanocrysin." B. R. Clarke.—p. 473.
Id. L. S. T. Burrell.—p. 479.
Id. S. L. Cummins.—p. 486.

Annales des Maladies Vénériennes, Paris

21: 401-480 (June) 1926

*Superinfection with Syphilis. D. L. Voronoff.—p. 401.
*Irreducible Serologic Reactions. H. Gougerot and E. Peyre.—p. 412.
*Endocrine Derangement in Congenital Syphilis. Récamier.—p. 421.

Superinfection with Syphilis.—The inguinal glands presented an appearance as with a primary syphilitic lesion, parallel to the development of an ulcer on the penis from superinfection during the tertiary stage. Three months after the healing of the ulcer, a gummatous ulcer developed on the pharynx. There had been no active manifestations of the old syphilis for five years. This case conflicts with the prevailing theories on superinfection, and Voronoff has been unable to find an analogous case on record.

Irreducibly Positive Wassermann Reaction.—Two cases are analyzed in which it proved impossible by intensive treatment to render the Wassermann test negative during years. But there were at one or several times a brief period in which all the serologic tests were negative. No cause for these fluctuations could be discovered.

Endocrine Derangement from Congenital Syphilis. — Récamier has made a special study of endocrine derangement in twenty-one women and girls with congenital syphilis. Serologic tests were often misleading, but mercurial treatment proved the touchstone and cure. In the differential diagnosis, lassitude, especially in the morning, headache, sometimes at night, most frequent before the menses, symptoms suggesting neurasthenia, depression, and vague disturbances which others regard as imaginary keep these patients unhappy. Supplementary organotherapy is indispensable, whether the indications are predominantly for ovarian or thyroid treatment, or the disturbances indicate that several glands are involved. The endocrine disturbances are aggravated by puberty, childbirth and the menopause, or they may start first with a childbirth. When such women marry a man free from syphilis they may have one daughter, but no other children, and the stigmata of syphilis may be more evident in the child than in the mother.

Annales de Médecine, Paris

19: 553-687 (June) 1926

*The Tubercle Bacillus. A. Calmette and J. Valtis.—p. 553.
Etiology of Pulmonary Tuberculosis in Adults. L. Bernard and L. Denoyelle.—p. 561.
Tuberculin Test in Measles. R. Debré and K. Papp.—p. 576.
*Pregnancy Cholesteremia. M. Salomon and F. de Potter.—p. 587.
Perforations in Artificial Pneumothorax. L. Bernard et al.—p. 609.
Curable Forms of Progressive Tuberculosis in Infants. L. Bernard and J. Paraf.—p. 638.
Exploration of Respiration. L. Binet and H. R. Olivier.—p. 666.

The Virulent Filtrable Elements of the Tubercle Bacillus.—Calmette and Valtis relate experiments, made in collaboration with Nègre and Boquet, in which gravid guinea-pigs were inoculated with filtrates of tuberculous products or cultures. It appeared that the filtrates contained virulent elements, able to attack the fetus, after having passed through the intact placenta. The fetal lesions were localized almost exclusively in the subhepatic lymphatic glands. Characteristic acid-resisting tubercle bacilli were found there. The thinning of the endothelial wall of the placenta at the end of gestation in these animals might favor penetration. This anatomic phenomenon may be less pronounced in the bovine and human species. However, it is probable that intra-uterine contamination of a calf or infant is not an exceptional occurrence. It probably proves rapidly fatal, without any well defined lesions in any organs.

Pregnancy Cholesteremia in Tuberculous Women.—Comparative estimation of the blood cholesterol was made by Salomon and de Potter on eighty-eight pregnant women; thirty of them were healthy and fifty-eight had pulmonary tuberculosis. The amount of cholesterol in pregnancy and after childbirth was about normal with nonprogressive tuberculosis. It was reduced in the active cases, especially in the rapidly progressing form accompanied by fever. Notable hypocholesteremia persisting after childbirth indicates a fatal issue before long. Further research showed that there is no connection between cholesteremia, arterial pressure and anergy to tuberculin, as revealed by the skin test.

Archives d'Ophtalmologie, Paris

43: 321-384 (June) 1926

*Eyeball as Autograft. L. Weekers and J. Lambrecht.—p. 326.
*Treatment for Glaucoma. A. F. Alonso.—p. 330.
Congenital Exuberant Growth of Circulus Iridis Minor. Koby.—p. 349.
The Cornea-Iris Angle and the Aqueous Humor. F. Benoit.—p. 352.

The Eyeball as Autograft After Avulsion.—Accidental injury of the left cheek caused complete expulsion of the eyeball from the orbit. It was held only by a threadlike band of the conjunctiva, all the muscles and the optic nerve being totally severed. The eye was immediately replaced in the orbit, then covered with a compressive dressing. Normal nutrition evidently continued in the injured eye. Its aspect and the anatomic structure appear intact up to four months (to date). These results may be definite. The sight is lost.

Treatment of Glaucoma.—Alonso's article was summarized, Aug. 28, 1926, p. 711, when published elsewhere.

Bulletin de la Soc. des Sciences Méd., Montpellier

7: 255-298 (April) 1926. Partial Index

*Acute Tuberculous Meningitis. Vedel et al.—p. 266.
Advantages of Wet Cupping in Treatment of Furuncles and Carbuncles. Lauze.—p. 277.
Kaolin Technic for Blood Grouping Tests. Falgairolle.—p. 283.

Acute Tuberculous Meningitis with Recovery. — Videl, Giraud and Puech report that a young woman developed an acute, severe, febrile meningeal syndrome. The cerebrospinal fluid was limpid but contained cells, mostly lymphocytes, and an acid-resisting bacillus which induced typical tuberculous lesions in a guinea-pig inoculated. Two of the patient's brothers and two cousins had died from tuberculous meningitis. The fifth day the whole meningitic picture disappeared, and the recovery was complete, with no signs of recurrence during the thirty-two months to date although the young woman has acquired syphilis in the interim. They explain the case as an ephemeral tuberculous meningitis, the organism conquering the invading bacillus. In the sixty cases of alleged recovery from tuberculous meningitis on record, in fourteen inoculation of guinea-pigs was positive but no tubercle bacilli could be detected with the microscope; in seven both methods of examination were positive, as likewise in the case here described. Fully 25 per cent of the patients are known to have succumbed to tuberculosis later, and the true figure is probably much higher as it has been impossible to trace them all.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 1155-1202 (July 2) 1926

*Emotional Asthma. R. Bénard and E. Joltrain.—p. 1155.
Puriform Syphilitic Meningitis. P. Lechelle et al.—p. 1160.
Pulmonary Gangrene with Cancer. M. Renaud.—p. 1168.
Metastases of Cancer of the Kidney. P. Harvier and A. Lemaire.—p. 1169.
Intradural Hematoma of the Brain. P. Harvier et al.—p. 1172.
Liver Functioning in Azotemia. A. Rémond and H. Colombiès.—p. 1174
Semeiologic Significance of Glycorrhachia. Fontanel et al.—p. 1178.
*Serum Sickness and the Thyroid. V. de Lavergne.—p. 1182.
Autovaccine in Treatment of Cerebrospinal Meningitis. Courtois-Suffit and G. Garnier.—p. 1185.
Splenic Anemia. N. Fiessinger and H. R. Olivier.—p. 1193.

Emotional Asthma and Hemoclastic Shock.—Bénard and Joltrain treated a woman, aged 33, with slight exophthalmic goiter and asthma. The first paroxysm of asthma occurred at the age of 18 after a severe fright. An experimental violent emotion induced hemoclastic shock followed by a paroxysm of asthma. Disturbance of the neurotonic equilibrium and amphotonia were manifest. The oculocardiac reflex pointed to sympathicotonia before the emotional shock, to vagotonia after the shock.

Serum Sickness and the Thyroid Gland.—De Lavergne's observations were made on thirty-five men who had reacted with an eruption to serotherapy. In twenty-eight, an increase in the size of the thyroid preceded by a day, or occurred simultaneously with manifestations of serum sickness. In nineteen, the increase was 1 cm. or less; in nine, 1.5 to 2 cm. The thyroid returned to normal as soon as the morbid phenomena disappeared. Functional tests of the thyroid revealed enhanced activity. An upset in the balance of the sympathetic system and stimulation of the thyroid function are among the clinical phenomena of serum shock.

50: 1203-1261 (July 9) 1926

Facial Reflex in Encephalitic Parkinsonism. H. Dufour et al.—p. 1204.
Ultraviolet Rays for Amyloid Degeneration. F. Bezançon et al.—p. 1205.
Vaccine Treatment of Varicose Ulcers. Tixier and Bize.—p. 1210.
Paroxysmal Hypertension with Mediastinal Lymphosarcoma. M. Villaret et al.—p. 1215.
*Familial Craniofacial Dysostosis. R. Debré and C. Petot.—p. 1221.
Sanocrysin in Pulmonary Tuberculosis. R. Burnand and Gilbert.—p. 1229.
*Sodium Bicarbonate in Treatment of Tetany. Sicard et al.—p. 1237.
Tuberculous Ulceration of the Palate and Pharynx. G. Caussade and Jampolwski.—p. 1241.
*Familial Plethora with Polycythemia. Emile-Weil and Stieffel.—p. 1248.
Hemoglobinuria from Fragility of the Blood Corpuscles. Idem.—p. 1253.
Sensitization to Sun Rays from Acriflavine. Rathery and Marie.—p. 1258.

A Case of Familial Dysostosis of the Skull and Face.—Debré and Petot record characteristic bone malformation of the skull and face and ocular disturbances in a mother and four of her twelve children. The condition, the mother reported, had shown itself in infancy and had gradually increased up to the seventh year, since which time it had been stationary. The rest of the skeleton was uninvolved. Headache was noted as the only functional disturbance apart from the eyes. The syndrome was observed in eleven members of three generations, belonging to the same family. The article is illustrated.

Intravenous Injections of Sodium Bicarbonate in Tetany.—Sicard, Paraf and Mayer recently used this treatment in a child, aged 3, and in three women with cancer of the gastrointestinal tract. The child was given 250 cc. of a 2 per cent solution of sodium bicarbonate, one half injected in a vein at the bend of the elbow, the other half in the external jugular vein. The jugular injection was repeated the evening of the same day and the next morning. A dose of 10 Gm. of sodium bicarbonate by the mouth, associated with a proctoclysis of the solution, was given later. The contractions disappeared entirely and the attacks did not return. The child was subsequently exposed to ultraviolet rays for the persisting Trousseau's sign. One woman was given 400 cc., the others 500 cc. of the 2 per cent sodium bicarbonate solution, by the vein. The spasms subsided in all, and did not reappear during the few remaining weeks of their life. The favorable action of sodium bicarbonate is explained on the theory that the convulsions in tetany are caused by a humoral change analogous to that in hemoclastic shock. This also explains, they say, why injections of sodium bicarbonate may prevent an anaphylactic or protein shock, or be advantageously used in asthma or migraine.

Familial Plethora with Polycythemia.—Emile-Weil and Stieffel observed a sister and brother, aged 49 and 53, with a plethoric appearance. In the woman, the number of red blood corpuscles ranged from five and one half to seven million per cubic centimeter; the bleeding time was from six to eleven minutes; the coagulation time from fifteen to thirty-five minutes with retarded retraction of the blood clot. In the man the number of the red blood corpuscles was 6,440,000; the coagulation time from six to ten minutes; retraction of the blood clot was normal. In both patients the viscosity of the total blood was increased, while the viscosity of the serum was normal. The spleen was slightly enlarged only in the woman. Injections of serum from the two patients induced an increase of the red blood corpuscles in rabbits. A positive Wassermann test in the man suggests the theory that congenital syphilis may be the origin of this familial blood disease.

Comptes Rendus de la Société de Biologie, Paris

94: 1283-1312 (May 28) 1926. Partial Index

*Tuber Cinereum in Inanition. C. I. Urechia and S. Mihalescu.—p. 1297.
*Benzoin Test in 536 Cases. C. I. Urechia and I. Ciocan.—p. 1299.
*Acetaldehyde in Cerebrospinal Fluid. P. Thomas and Maftei.—p. 1300.
*Lesions of Tuber Cinereum in Drowning and Hanging. C. I. Urechia and M. Kernbach.—p. 1309.

Lesions of Tuber Cinereum Region in Inanition.—Urechia and Mihalescu studied the changes in the tuber cinereum of five dogs dead from absolute inanition. Lesions were constantly found in the periventricular nuclei and frequently, but less pronounced, in a few other nuclei. The lesions are probably connected with the disturbance of metabolism and of the vegetative system, from the inanition.

The Benzoin Colloidal Test in 536 Cases.—Urechia and Ciocan compare the results of the benzoin test in the cerebrospinal fluid with those of the Wassermann test. In thirty-eight patients with general paralysis, the benzoin test was positive in the cerebrospinal fluid of all, the Wassermann test in thirty-two. In the serum, the first test was positive in thirty-four, the second in twenty-six. In a syphilitic hemiplegia of eight years' standing the Wassermann test was negative in the serum and cerebrospinal fluid, while the benzoin test was positive. In 233 cases of primary or secondary syphilis, the Wassermann test was positive in 139; the colloidal test in 209; in 139 cases of visceral syphilis, the former test was positive in ninety-five, the latter in 123. In seven cancer cases the Wassermann test was faintly positive in three; the colloidal test negative in all.

Acetaldehyde in the Cerebrospinal Fluid.—Thomas and Maftei found acetaldehyde in all the twenty-three cerebrospinal fluids examined. There was less in the fluid from four healthy persons than in that from different patients. It was most manifest in a subject with grave diabetes; less pronounced in general paralysis and dementia praecox. The amount was always small.

The Nuclei of the Tuber Cinereum in Drowning or Hanging.—Urechia and Kernbach had the opportunity to examine the tuber cinereum of seven persons who had committed suicide by drowning or hanging. The lesions were most frequent and most intense in the periventricular and supra-optic nuclei, where they form isolated foci. They query whether possibly these foci are connected with certain groups of sympathetic or parasympathetic cells as certain cerebral symptoms are so pronounced in attempts at suicide by hanging or drowning.

Encéphale, Paris

21: 417-496 (June) 1926

Experimental Psychology and Psychiatric Clinic. Lahy.—p. 417.
Cataphrenia Syndromes. Austregesilo.—p. 425.
*A Familial Nervous Disease. H. Verger and Aubertin.—p. 433.
Forensic Reactions in Encephalitis. M. Rossi.—p. 442. C'en.

A Familial Nervous Affection Resembling Wilson's Disease.—The nervous disease described with illustrations was observed in a father, aged 50, and in a son and daughter, 25 and 26. The disease started in the father eight years ago; in the children, one and two years later. Generalized spastic contractures, especially pronounced with volitional movements, was the phenomenon common to all three patients. The clinical picture in the children included also involuntary movements, of the athetosic type, and exaggeration of the tendon reflexes. The slow development of the disease as well as absence of the characteristic ocular phenomena testified against the diagnosis of epidemic encephalomyelitis. The facts excluded also the possibility of contagion. The affection does not conform to typical Wilson's disease; but the remarkable resemblance to it suggests that the lenticular nuclei may be chiefly involved in this familial malady. Verger and Aubertin add that this diagnosis is only provisional so long as the anatomic examination is not made.

Journal de Radiologie et d'Electrologie, Paris

10: 241-288 (June) 1926

Spectrography of Roentgen Rays. A. Zimmern.—p. 241.
Roentgen-Ray Diagnosis of Lumbosacral Spina Bifida. C. Roederer and F. Lagrot.—p. 255.
Roentgenograms of Tuberculous Pelvic Peritonitis Simulating Bladder Calculi. Sicard et al.—p. 262.
*Stomach Within the Thorax. M. Guinet and A. Debbasch.—p. 265.
Roentgenograms of Posterior Sinuses Obtained with Film Introduced into Mouth. P. Aimé and A. Blondeau.—p. 267.

Case of Location of the Stomach Within the Thorax.—In a man, aged 60, who complained of a tender point in the left hypochondriac region, repeated fluoroscopic examinations showed the stomach to lie along the right margin of the heart, above the diaphragm, and behind the right lung. The fundus was lodged in the diaphragmatic culdesac, and the pylorus passed through the diaphragm at the place usually occupied by the cardia. The length of the esophagus was normal, but it curved on itself. The man declared that his digestion was

always good, and that he had never had any stomach disease. Only five similar cases were found on a search of the literature. Three diagrammatic illustrations are added.

Journal d'Urologie, Paris

21: 481-576 (June) 1926

*Extraprostatitis and Extracystitis. Aversenq.—p. 481.
*The Ambard Constant. E. Christian.—p. 501.
*The Ambard Laws and Constant. N. C. Paulesco et al.—p. 510.
Bilateral Partial Exclusion in Bilateral Renal Tuberculosis. Jungano.—p. 519.
Fatal Intestinal Occlusion After Nephrectomy for Tuberculosis. Caraven.—p. 521.
*Radium Treatment of Bladder Cancer. Reynard.—p. 523.
*Torsion of Ovary in Pseudohermaphrodites. Fruchaud and Vialle.—p. 525.

Extraprostatitis and Extracystitis.—Aversenq applies these terms to inflammatory processes originating in the urethra and spreading in the prerectal space. Traumatism of the infected urethra sets up the inflammation; it is abdominal at first but soon plunges into the pelvis. In one case described it ran a fulminating course, and two other patients died in a few hours after the operation. He gives the details of a few cases in which an early diagnosis allowed prompt intervention, with recovery. He calls attention to the bulging in the epigastrium, the pain relieved only by drawing up the legs on the abdomen, the clinical picture of general infection, and the extension of the process into the subperitoneal space. Complicating pericystitis and involvement of the prostate and bladder may occur, but the extension of the process has another aspect and another destiny. Palpation through the rectum systematically repeated during grave infection of the urethra will reveal the extraprostatitis in its incipiency.

The Ambard Ureosecretory Index.—Christian objects to trusting too implicity to the Ambard coefficient. It is a reliable guide alone only in case of operations on the bladder and ureter.

The Ambard Laws.—Paulesco, Marza and Trifu report clinical and experimental experiences which testify, they say, that Ambard's first law is incorrect, and the second law not only incorrect but illogical. Hence the coefficient based thereon is of no use in science and above all in medicine.

Cure of Bladder Cancer Under Radium.—Reynard applied electrocoagulation and then three tubes of radium for forty-eight hours. The cancer was too friable to allow needle treatment. All infiltration had disappeared by the tenth day, and the suprapubic fistula rapidly healed. Two years and a half later nothing suggesting malignant disease can be detected in the woman, now aged 67.

Torsion of Ovarian Cyst in Pseudohermaphrodites.—The remarkable feature of the case reported is that the torsion occurred alike in two gynandroid pseudohermaphrodite "brothers," aged 17 and 24, with a two months' interval.

Liége Médical

19: 573-589 (July 18) 1926

*Radium Treatment of Corneal Epithelioma. L. Weekers and J. Colmant.—p. 573.
Biochemistry of Milk. H. Hinglais.—p. 578. C'td.

Cure of an Epithelioma of the Cornea Under Radium.—Weekers and Colmant remark that the slow and superficial development of epitheliomas of the cornea renders them particularly amenable to radiotherapy. The patient was a man, aged 50. Two radium tubes were applied to the eye, held in place with a paraffin and wax cast fitting tight to the eye (Regaud). The exposure was for six days, night and day (4,320 millicuries), and no changes were observed in the eye or skin except that the tumor subsided. The treatment was resumed about a month later, the application continued for six days (7,200 millicuries). The cornea became less opaque and this eye counted fingers at 2.5 meters. Two weeks after this second exposure, a radioconjunctivitis developed and radiodermatitis of the eyelids, brow and cheek, with loss of the eyelashes and eyebrows. The radiodermatitis healed under infra-red rays, and there has been no recurrence of the epithelioma during the eight months to date.

Paris Médical

61: 33-48 (July 10) 1926

Action of Emetine on Arterial Tension in the Tuberculous. C. Mattei and A. P. Donati.—p. 33.
Sunlight Treatment of Tuberculosis. G. Meyer.—p. 37.
*Surgical Diathermy for Roentgen-Ray Cancer. X. Debedat.—p. 40.
*Osteomyelitis of Upper Jaw. E. Cadenat and A. Cola.—p. 42.
Colloidal Extract of Tubercle Bacilli in Treatment of External Tuberculosis. A. Grimberg.—p. 44.
Lymph Circulation After Removal of Axillary Glands. R. Foncin and A. Adnot.—p. 46.

Roentgen-Ray Epithelioma Cured by Electrocoagulation.—Debedat reports his auto-observation of a malignant growth induced by the professional use of the roentgen rays. The characteristic lesions developed on his right middle finger and on the left forefinger after twenty-five years of roentgenologic work. Surgical diathermy was applied under personal supervision of Bordier at Lyons. The middle finger was exposed for one or two minutes, and the index for a few seconds. Then, dressings with lime liniment were applied for several days, followed by washing with an isotonic liquid (physiologic salt solution and hydrogen dioxide). The pains disappeared in three days; the sloughs separated by the tenth day, and the healing was complete in six weeks. The scars are hardly visible. He had constantly refused to allow excision of a scrap for biopsy, and thinks he gained by this refusal.

Bilateral Osteomyelitis of Upper Jaw in a Child.—Cadenat and Cola refer to a personal case of bilateral osteomyelitis, in the upper jaw, in a boy, aged 5. They are not aware of any other case in which both sides of the maxilla were affected. The disease started suddenly, inducing suppuration in two or three days. The general condition was relatively good. It is probable that the infection involved first the gum, whence it spread to the bones, by the lymphatic route. The boy improved notably under surgical treatment, with removal of sequestra, and there has been no recurrence during the three months since. They compare this with thirteen other cases on record. Pyemia or secondary localizations were never noted, they say, in the cases cited.

Presse Médicale, Paris

34: 865-880 (July 10) 1926

*Diets with Limited Nitrogen. C. Richet, Jr., and R. Monceaux.—p. 865.
Brass Founders' Fever. F. H. de Balsac et al.—p. 866.

Diets with Restricted Nitrogen.—Richet and Monceaux tabulate two diet lists, with restricted nitrogen, designed especially for patients with sclerosis of the kidneys. The strict diet is limited to a kind of bread, or rather small cakes, free from nitrogenous substances, with cream and fruits. The cake is prepared from 100 Gm. of starch, 30 Gm. of butter and 25 Gm. of sugar; moistened with water, raised with yeast for twenty-four hours, and baked. Among fruits, applies contain the smallest amount of nitrogen; dates and nuts, the largest. Leeks, carrots, turnips, potatoes and cabbage contain little protein. Salads are not advised; milk is absolutely contraindicated. The meals, as suggested for one day, present a total of 7.6 Gm. of protein and provide 3,000 calories. The less restricted diet includes cauliflower, Jerusalem artichokes, string beans, and a small amount of rice and macaroni. The above described cakes should replace ordinary bread. About 75 Gm. of meat or fish may be allowed twice a week. Satisfactory results have been noted in patients with hypertension, azotemia, renal sclerosis and gout from the strict diet and from the less restricted continued for a longer time. He insists that the usual milk-vegetarian diet does not respond in the slightest to what is desired. He emphasizes further that milk, with its 3.4 per cent protein, eggs, dried beans, peas and lentils should be prohibited.

34: 881-896 (July 14) 1926

*Myocardiac Infarction. R. J. Weissenbach and M. Kaplan.—p. 881.
Infection in Gastric and Duodenal Ulcer. R. Clément.—p. 884.

Hyperalgic Angina Pectoris from Infarction of Myocardium.—Weissenbach and Kaplan describe the prevailing clinical features of the disease, as seen in three personal cases, in one case of Lian and Pollet's, and twelve cases of Wearn's.

The pain is spontaneous, extremely severe; it may radiate to the entire chest, the back, epigastrium, both upper limbs, neck and chin. In their cases it persisted with no free intervals till death, five to ten days from the onset. It is associated with failure of the myocardium, evidenced in rapid fall of the arterial tension, involving both systolic and diastolic pressures, and in disturbances of the cardiac rhythm, characterized by gradual acceleration of the pulse, extrasystoles, and gallop or alternating rhythm. Improvement is not impossible, but the patient remains under the menace of rupture of the heart or other complications of the infarction. The treatment is merely symptomatic; resistance to all medication is characteristic of the condition.

Revue Neurologique, Paris

33: 721-1278 (June) 1926

*Methods of Exploration of the Sympathetic. G. Söderbergh.—p. 721.
*Idem. André-Thomas.—p. 767.

Methods of Exploration of the Sympathetic System.—This issue contains Söderbergh's and André-Thomas' addresses delivered at the Seventh Annual International Convention of Neurologists in Paris, June 1 and 2 of this year. "The Methods of Clinical Exploration of the Sympathetic System; Their Value" was the subject of both speakers.

Schweizerische medizinische Wochenschrift, Basel

56: 657-680 (July 10) 1926

Mutation Theory. Naegeli.—p. 657.
Epigenesis of Blood. M. Hausmann.—p. 658.
*Gastric Ulcer. M. Askanazy.—p. 661.
Perforated Ulcers. W. Odermatt.—p. 665.
*Idiosyncrasy Against Egg. W. Jadassohn.—p. 667.
Radioimmunization. A. Rosselet.—p. 670.

Gastric Ulcer.—Askanazy describes proliferations of nerves and nerve cells in gastric ulcers. He also reports a case of ulcer of the stomach penetrating into the pericardium and heart. The changes in the nerves seemed to play a rôle in the chronicity of these cases also.

Idiosyncrasy Against Egg.—Jadassohn studied a case of idiosyncrasy to eggs. The antigen was dialyzable and insoluble in ether—therefore probably neither a protein nor a lipoid. Local allergy could be transmitted to other persons by intracutaneous injections of the patient's serum (Prausnitz-Küster method). Such persons reacted with hives when injected with the antigen twenty-four hours later in the same spot. Besides this, he observed local urticaria in these places when he injected the antigen at other places ("provocation from a distance").

Archivio Italiano di Chirurgia, Bologna

16: 1-132 (July) 1926

*Primary Sarcoma of the Uterine Cervix. E. Momigliano.—p. 1.
*Therapeutic Compression of Subclavian Vessels. G. B. Macaggi.—p. 71.
*Actinomycosis of the Breast. A. Zaffagnini and M. Gamberini.—p. 81.
Vascularization of Autoplastic Bone Implants. G. Bertini.—p. 105.
Adenoma of Inguinal Region of Wolffian Origin. G. Sacerdote.—p. 122.

Primary Sarcoma of the Uterine Cervix.—Momigliano's illustrations show that the disease in his case was an adenomyometritis of sarcomatous nature in the cervical canal. He reviews the literature on the subject (274 titles), and discusses the significance of the giant cells in such cases.

Compression of the Subclavian Artery.—Macaggi recalls that hemorrhage from the subclavian artery may be rapidly fatal. He gives an illustration of a method for arresting it which he has found simple and dependable. The compression can be kept up indefinitely. The patient lies horizontally on a pillow which allows the head and trunk to slope away from the injured side. Traction is applied to the arm which lies slanting away from the trunk, sloping slightly downward. This gradual traction on the arm, with countertraction from the weight of the trunk and the hands of an assistant at the neck, or the operator pushing with his other hand, soon arrests the radial pulse, without violence, and the provisional hemostasis thus realized can be kept up indefinitely. An extension apparatus can be devised as for a fracture, if desired. The artery and vein are squeezed between the clavicle and the first rib, the shoulder the lever. To aid in development of collateral circulation, the compression may be intermittent.

Primary Actinomycosis of the Breast.—Zaffagnini and Gamberini warn that the diagnosis is often difficult at first, and even when the ulcerative stage has been reached there is nothing characteristic to exclude other mammary affections.

Pediatria Archivio, Naples

2: 1-86, 1926

Spina Bifida. A. Merlini.—p. 1.
*Surface Tension of the Cerebrospinal Fluid. M. Giuffrè.—p. 31.
Blood Sugar in Young Children. M. Solito.—p. 38.
Isolated Vitamins. F. Cascella.—p. 49.

Surface Tension of the Cerebrospinal Fluid.—Giuffrè measured the surface tension of the cerebrospinal fluid. It is slightly lower than that of water in subjects with healthy meninges, as well as in poliomyelitis and encephalitis. It decreases in tuberculous meningitis and is especially low in purulent meningitis.

Pediatria, Naples

34: 689-752 (July 1) 1926

Acute Poliomyelitis. M. Giuffrè.—p. 689.
Syphilis and Age. A. Bocchini.—p. 705.
Measles Without Eruption. S. Cannata.—p. 720.
*Primary Diphtheria of the Vulva. A. Versari.—p. 723.
*Syphilis in Twins. G. Castorina.—p. 731.

Primary Diphtheria of the Vulva.—Versari observed a case of primary diphtheria of the vulva in a girl, 2 years of age. Serotherapy, instituted before the culture confirmed the preliminary diagnosis from a slide, proved beneficial.

Syphilis in Twins.—Castorina was unable to find any evidence of syphilis in the male child, while the twin sister had a positive Wassermann reaction, enlargement of the liver and spleen, and the Mongolian habitus.

Policlinico, Rome

33: 933-966 (July 5) 1926

Serodiagnosis of Syphilis. O. Sciarra.—p. 933.
Precesarean Hysterectomy. L. Pansini.—p. 934.
Cystic Mesenteric Tumors. P. Polcenigo.—p. 937.
Pneumothorax and Work. E. Curti.—p. 939.
Surgery of Common Bile Duct. G. Caponetto.—p. 942.

33: 969-1002 (July 12) 1926

Fracture of Tibia. B. Masci.—p. 969.
Complicated Fractures. P. Para.—p. 972.
*Tuberculous Hemoptysis. G. Luzzatto-Fegiz.—p. 974.

Tuberculous Hemoptysis.—Luzzatto-Fegiz distinguishes between the real and the imaginary dangers in hemoptysis. The great danger consists in aspiration bronchopneumonia. The probability of suffocation or fatal loss of blood is very small, and these patients would not respond to any treatment. He is not afraid to have the patient expectorate all the blood he can. The patient should be in a half-sitting position and if the site of the hemorrhage is suspected, the patient should avoid the position on the supposedly healthy side. Gelatin, laxatives, camphor, calcium and preparations made from blood platelets are helpful.

Riforma Medica, Naples

42: 577-600 (June 21) 1926

Case of Pyonephrosis from Calcified Cystic Dilatation and Calculi. G. Arena.—p. 577.
Basal Metabolism and Potential Energy of the Food in the Tuberculous. G. Margreth.—p. 582.
*Typhoid in the Vaccinated. R. Lovaglio.—p. 585.
*Fango in Treatment of Osteitis Deformans. E. Di Tommasi.—p. 594.
*Foreign Body in the Bladder. L. Di Natale.—p. 597.

Typhoid After Vaccination.—Lovaglio noted an irregular and atypical form of the fever in soldiers who had been vaccinated against typhoid about a year before. The course of the disease was shorter and high fever was rare, but enlargement of the spleen was constant, and intestinal hemorrhage was frequent, as also dicrotism.

Treatment of Osteitis Deformans.—Di Tommasi reports with illustrations a case of Paget's disease of the bones in a man, aged 67, in which great improvement was realized with a course of treatment with mineral mud. He says that the

benefit from the fango—which is such a valuable treatment for gout—suggests that the osteitis deformans may be of a similar nature to gout.

Table Knife in the Bladder.—The bone handle with fragment of blade measured 10 cm., and was removed from the young woman's bladder by a high incision. The case teaches that it is better to proceed almost at once to a suprapubic incision instead of wasting time and doing more damage by attempts to extract the foreign body through the urethra.

Revista Médica Latino-Americana, Buenos Aires

11: 1279-1495 (May) 1926

*Liver Function Test. R. A. Bullrich and A. Paolucci.—p. 1279.
*Surgical Treatment of Rhinophyma. Fidanza and Ruiz.—p. 1285.
Fracture of the Acetabulum. C. Lugones.—p. 1314.
Basal Metabolism. G. Bosco.—p. 1325.
Endocarditis Lenta. M. J. Barilari.—p. 1362.
Torsion Spasm. A. S. Marotta.—p. 1369.
Transient Nodal Rhythm. L. de Marval and D. Vivoli.—p. 1404.
Catheterization of the Bladder and Its Mishaps. J. J. Gazzolo.—p. 1419.
Clinical Importance of Uricacidemia. Saenz and Haendel.—p. 1435.

Test for Insufficiency of the Liver.—Bullrich and Paolucci have applied the Geraghty and Rowntree kidney test to detect hepatic incompetency, and they extol the simplicity of the technic and the reliability of the results. After injection of the phenolsulphonphthalein by the vein, the healthy kidneys eliminate up to 70 per cent in two hours. This demonstrates that the kidneys are healthy but, they assert, it shows more than this: It demonstrates that the liver is healthy also. When the liver is not functioning properly, it allows the dye to pass on, and consequently more than 70 per cent is eliminated. In fourteen cases of various forms of liver disease, the proportion eliminated totaled up to 98 per cent in some, while in typhoid and other patients the elimination was within normal range or below.

Correction of Rhinophyma.—The extreme disfigurement in the three cases described with illustrations by Fidanza and Ruiz was effectively corrected by removal of the superfluous tissue and "modeling abrasion." There was no need for plastic reconstruction, the parts healing in normal shape and outline.

Semana Médica, Buenos Aires

1: 1241-1308 (June 10) 1926

*Bandl's Ring Impeding Version. Ubaldo Fernández.—p. 1241.
Surgical Treatment of Trophic Edema. Sussini and Casaubon.—p. 1246.
*Spinal Anesthesia in Gynecologic Surgery. A. Bello.—p. 1255.
Argentine Works on Dermatology and Syphilis in 1925. A. A. Fernández.—p. 1256.
Pneumoperitoneum in Treatment of Peritoneal Tuberculosis. O. P. Curti.—p. 1263.
Hematocolpos from Imperforate Hymen. A. J. Lasala.—p. 1264.
*Local Eosinophilia in Cancer. Pavlovsky and Widakowich.—p. 1265.
Simplified Technic for Persufflation of Fallopian Tubes. A. Rubinstein.—p. 1278.
Significance and Importance of Orthopedics. J. Valls.—p. 1280.
The Kielland Forceps. R. Schwarcz.—p. 1281.
Ether by the Rectum in Whooping Cough. H. Magliano.—p. 1299.

Obstetric Version with Contraction of Bandl's Ring.—Ubaldo Fernández gives illustrations of his method of overcoming the difficulties for internal podalic version. The body of the fetus is twisted around in the axis of the uterus by rotating the protruding limb, aided by pressure from without. The contracting tissues do not form a perfect ring; one side is more contracted than the other, and rotating the body draws the neck out of the grasp of the ring on that side. This brings another part of the body against the ring, and version can then proceed as usual. This maneuver proved successful in the seven cases in which it has been applied, including two of breech presentation.

Spinal Anesthesia.—Bello expatiates on the superior advantages of spinal anesthesia for gynecologic operations. He emphasizes the importance of sterilization of a broad field with iodine, and the horizontal position of the patient, reclining on her side, the spine curved to the utmost. He tells her to bring her chin as close to her knees as possible. Local anesthesia down to the periosteum is indispensable. The intraspinal injection of 0.08 Gm. of stovain and 0.02 Gm. of cocaine—mixed with spinal fluid drawn into the syringe—usually anesthetizes for two hours.

Local Eosinophilia in Cancers.—Pavlovsky and Widakowich give a colored plate showing the remarkable disintegrating action displayed by the eosinophils in cancers. They seem to have a protective action against cancer invasion like that of the phagocytes against invasion of bacteria. It is evident even in the lymph nodes invaded by cancer cells. In malignant disease with much of this local eosinophilia, the course is exceptionally favorable. They urge the necessity for stimulating the defensive forces in combating malignant disease, and that a special effort should be made to promote production of eosinophils.

Archiv für Gynäkologie, Berlin

129: 1-226 (June 19) 1926

*Can a Woman Have Hemophilia? K. H. Bauer and E. Wehefritz.—p. 1.
*Obstetric Twilight Sleep (Hypnosis). G. von Wolff.—p. 23.
*Metabolism in the Pregnant. E. Klaften.—p. 66.
*Tardy Puerperal Hemorrhage. O. Frankl.—p. 87.
Adenomyosis Involving Uterus and Tubes. J. Schiffmann.—p. 97.
*Comparison of Blood of Mother and Infant. K. v. Oettingen.—p. 115.
Birth Mechanism in Contracted Pelvis. P. Schumacher.—p. 146.
*"Roentgen Children." P. Werner.—p. 157.
*Protein Therapy in Acute Inflammation. W. Butomo.—p. 171.
*Coxitic Intrapelvic Protrusion. R. Benda.—p. 186.
Double Female Genital Organs. A. Ecke.—p. 204.

Does Hemophilia Occur in Women?—Bauer and Wehefritz reiterate that there is no evidence to show that true hemophilia is ever observed in women. In a new family tree they describe, in each of four generations from one to six of the men were bleeders and none of the women, and only five of the men escaped. To date we must accept hemophilia as a sex-bound recessive factor.

Obstetric Twilight Sleep in Hypnosis.—Wolff describes his technic and says that it proved successful in numerous cases at the Berlin maternity, but mainly in the mentally sound women. The nervous were less susceptible to it, and the method requires expenditure of much time and much nervous energy on the part of the obstetrician. A bibliography of 116 references is appended.

Internal Secretion, Basal Metabolism and Transformation of Protein in the Pregnant.—Klaften has been experimenting for two years with extracts of various organs administered to pregnant women. Among the facts apparently established by his research are that the placental extract stimulates metabolism, and that thyroid extract increases the basal metabolism much more than in the nonpregnant. It may give great service in the depression of protein metabolism which seems to be an important element in the eclampsia picture. His research has thus supplied a basis for thyroid treatment of impending eclampsia. Ovarian extracts had the least influence of all on the basal metabolism. In ten women after panhysterectomy or roentgen-ray castration, the basal metabolism was 20 to 40 per cent below normal, but not with pituitary amenorrhea.

Tardy Puerperal Hemorrhage.—Frankl analyzes 460 cases of hemorrhage after abortion or childbirth. The curet scrapings, the uterus walls after hysterectomy and other evidence testify that defective involution of the decidua and of the vessels is a common cause for tardy hemorrhage. We do not have to assume retention of scraps in every case.

Comparison of Maternal and Fetal Blood.—Oettingen's tables show a much higher content of amino-acids, calcium and phosphorus in the blood of the new-born. It shows further a high stability in regard to the sedimentation and other tests. The maternal blood responds readily and intensely to tests which meet with only a sluggish, if any, response in the young infant's blood, even when conditions are varied by heating, etc. He urges further research in this line on a more extensive scale, and especially to determine whether the accumulation of calcium, phosphorus and amino-acids in the blood of the new-born may not be due to an elective secretion of the building stones required by the infant organism.

Roentgen-Ray Children.—Werner reports forty-five pregnancies in twenty-two women whose ovaries had been previously exposed to the roentgen rays. Of the twenty-seven viable children born, 19 per cent died in early infancy. Four

of the surviving twenty-two children had congenital malformation of the heart or trachea, and five others minor anomalies, while several of the others are not normally healthy children. In three other cases the pregnancy was under way at the time of the exposures, and one of the children is an idiot; the two others seem to be normal. Zappert has collected twenty-one such instances, including a personal case. Only ten of the children showed no physical anomalies. Six others presented microcephalus, idiocy or mongolism.

Action of Parenteral Injection of Milk on Acute Inflammation.—Study of thirty-five gynecologic patients and experimental research has confirmed that intramuscular injection of milk induces a decided reaction in the bone marrow. The leukocytes increase in numbers and take a more active part in acute suppurative processes.

Inward Protrusion of the Acetabulum.—Benda gives an illustrated description of another case in which the acetabulum, under the influence of inflammatory changes, had grown inward, partly filling that side of the pelvis, and compelling cesarean section. In the fourteen cases of protrusion into the pelvis, only four were in males. In another case, a meningococcus coxitis had induced conditions that would certainly have entailed the protrusion if the girl had not died before it had a chance to develop.

Deutsche medizinische Wochenschrift, Berlin

52: 1113-1154 (July 2) 1926

Eugenics. E. Meyer.—p. 1113.
Fractures of Neck of Femur. E. Lexer.—p. 1115.
*Liver Function and Treatment. S. Isaac.—p. 1116.
Insulin in Liver Diseases. G. Hetényi.—p. 1119.
*Blood Transfusion in Ulcers. A. Plehn.—p. 1120.
Gastroscopy. A. Hübner.—p. 1123.
*Permeability of Meninges. R. Bieling and R. Weichbrodt.—p. 1125.
*Serum Plus Metal Salts. L. F. Walbum.—p. 1126.
Polycythemia from Irradiation. F. Krömeke.—p. 1127.
Postpartum Period. M. Traugott.—p. 1127.
Care of the Breasts. H. Klose.—p. 1132.
Protracted Tubal Abortions. Rissmann.—p. 1135.
Technical Novelties. M. Schütz.—p. 1137.

Liver Function and Treatment.—Isaac advises to use in the diet of patients with jaundice only such proteins as are retained long in the stomach, and therefore better hydrolyzed before they are resorbed. Carbohydrates are most suitable for these patients. The Meltzer-Lyon duodenal injection of magnesium sulphate helps to clear the jaundice. Insulin has given some good results, although the action is not explained. He agrees with Fischler on the importance of the urobilin test of the urine for detection of slight lesions of the liver. The test is just as important as the test for albumin in kidney disease.

Blood Transfusions in Peptic Ulcers.—Plehn uses 600-1000 cc. of defibrinated blood for transfusions in patients with hemorrhages from gastric or duodenal ulcer. The bleeding stops promptly. Besides this, he observed in nine out of eleven such patients a complete clinical recovery. The improvement of the subjective disturbances in ulcer patients is so regular that a failure would speak for the presence of cancer.

Permeability of Meninges.—Bieling and Weichbrodt show that Walter's method for determination of bromides in blood and cerebrospinal fluid with gold chloride is erroneous. They had better results with Hauptmann's modification (precipitation of proteins with trichloracetic acid).

Serum plus Metal Salts.—Walbum was able to cure mice injected with tetanus or dysentery toxin by combined injections of the antiserum with definite amounts (0.4 cc. of a 0.001 to 0.0006 molar solution) of a manganese salt.

Deutsche Zeitschrift für Chirurgie, Leipzig

196: 1-240 (May) 1926

Late Posttraumatic Apoplexy. A. Winkelbauer.—p. 1.
Retroperitoneal Causes of Intestinal Paralysis. R. Demel.—p. 28.
*The Pyloric and Duodenal Junction. F. Spath.—p. 39.
*Gastric Acidity and Pepsin Values. V. Orator and Knittel.—p. 70.
Serology of Peptic Ulcer. Orator and Kordon.—p. 84.
Injury to the Heart from General Anesthetics. F. Kazda.—p. 100.
Laws of Inflammatory Joint Contractions. F. Friedländer.—p. 121.
Surgical Treatment of Flatfoot. K. v. Dittrich.—p. 194.
A Case of Plastic Repair of Both Lips. R. Demel.—p. 210.
A Case of Aneurysm. H. Haberer.—p. 215.
Mediastinal Tumor or Aortic Aneurysm. O. Hoche.—p. 219.
Cutaneous Emphysema After Esophagoscopy. J. Zipper.—p. 223.
Stenosis After Transverse Resection of Stomach. Walzel.—p. 228.
Occult Postoperative Duodenal Fistula. A. Winkelbauer.—p. 232.

Pyloric Glands in the Duodenum.—Of forty-eight specimens of duodenal lining, Spath found gastric mucosa, containing pyloric glands, in one. He believes that this strengthens the theory that heterotopic pyloric glands in the duodenum may be responsible for peptic jejunal ulcers after Billroth II by inducing the second (chemical) phase of hydrochloric acid secretion.

Acidity and Pepsin Values in Gastric and Biliary Diseases.—In an examination of eighty cases, Orator and Knittel found high pepsin values in cholelithiasis as well as in ulcer cases with functional gastric disturbances or after gastroenterostomy.

Klinishe Wochenschrift, Berlin

5: 1209-1256 (July 2) 1926

*Pneumonoconiosis. A. Böhme.—p. 1209.
*Dilatation of the Heart. A. Loewy and A. E. Mayer.—p. 1213.
*Metabolism of Cancer. P. Rona and W. Deutsch.—p. 1216.
*Idem. O. Stahl and O. Warburg.—p. 1218.
*Ovary Hormone. B. Zondek.—p. 1218.
*Fractures of the Skull. W. Lange.—p. 1225.
*Blood Output and Oxygen. F. Kisch.—p. 1227.
*Nitrate Diuresis. E. Becher and G. May.—p. 1229.
Heart Block and Fibrillation. E. Block.—p. 1230.
Dick Test and Scarlet Fever Prevention. B. Vas.—p. 1232.
Paralysis Encephalitis. H. Hoff and E. Pollak.—p. 1235.
Cerebrospinal Fluid in Rabbits. F. Plaut.—p. 1235.
*Heart Beat and Liver. L. Asher.—p. 1236.
*Insulin and Carbohydrates. A. Lublin.—p. 1236.
Thyroid Treatment of Obesity. C. von Noorden.—p. 1238.
Endocarditis Problems in America. H. Cohn.—p. 1240.
Camphor. Bijlsma.—p. 1254.
A Hand Reflex. Kempner.—p. 1255.

Pneumonoconiosis.—Böhme reviews the symptoms of pneumonoconiosis and its alarming frequency in miners since the drills driven by compressed air came into use. Quartz dust is much more injurious than coal. There can be no doubt that pneumonoconiosis predisposes to pulmonary tuberculosis, although the latter also might accelerate the development of the former. Individual prevention has failed, but rapid removal of the dust by sprinkling and ventilation has greatly reduced the morbidity.

Dilatation of the Heart.—Loewy and Mayer made experiments on themselves and others. Inhalation of nitrogen for two to three minutes caused an acute dilatation of the heart in most of them. It was localized as a rule in the region of the pulmonary artery, but the ventricles also dilated in some experiments. The dilatation increased sometimes further after inhalation of air was resumed. It shows that the heart muscle is quite sensitive even to a short and only relative lack of oxygen. The dilatation is transitory.

Metabolism of Human Cancer.—Since the validity of Warburg's discoveries on the metabolism of cancer cells had been denied for human cancer by Bauer and Nyiri, the editor of the *Klinische Wochenschrift* asked Rona and Deutsch to repeat the experiments. They confirm fully Warburg's results. The relative amount of cancer cells in the sections seems to account for some divergent observations.

Lactic Acid Fermentation in a Carcinoma of Human Bladder.—The fermentative action of human cancers had been determined so far only by Warburg's manometric method, but not chemically. Stahl and Warburg determined both in a tumor consisting practically only of cancer cells. The manometric method indicated a lactic acid production amounting to 9.9 per cent of the weight of the tissue per hour; direct chemical determination showed 10 per cent, which is almost the same quantity as produced by malignant tumors of animals.

Ovary Hormone.—Zondek describes his method of preparation of the ovarian hormone, and accepts Klein's name "folliculin" for it. A cow's follicle contains on the average one mouse unit per cubic centimeter. The total hormone content of a woman's ripe follicle is about 3-5 units. He is opposed to Loewe's opinion on the dosage according to body weight. If this principle were applied to hormones, the dose

of pituitary extract in women would have to be 600 times larger than it is actually. He believes that the dose should correspond to the physiologic content of a human follicle. He reports a few good results in amenorrhea (one in an ovariectomized woman), and also the effect on the secondary sex characters. He warns against overestimating the possibilities of this treatment, and reports two cases in which he was unable to induce menstruation.

Fractures of the Skull.—Lange pleads for conservative treatment of not infected and not inflamed fractures of the base of the skull. The only exception should be made if a fracture of the mastoid makes an inspection of the drumhead impossible. Inflamed fractures should be treated like any other inflammation of the middle ear. An extensive chiseling is not always necessary.

Blood Output and Oxygen.—Kisch observed a considerable hypoxemia (30.5 per cent) in the arterial blood of dogs when increasing the frequency and decreasing the volume of respiration. The oxygen supply to the tissues becomes insufficient, and is not fully compensated in spite of the increased blood pressure and blood output from the heart. Addition of 16 per cent of carbon dioxide to the air also entails a lowering of the oxygen consumption. This is due to the impaired dissociation of the oxygen, and causes a similar increase in blood pressure and heart output, as the anoxemia in the former case.

Nitrate Diuresis.—Becher and May confirm the increased elimination of sodium chloride during a diuresis provoked by injection of sodium nitrate. The chlorine and urea concentrations of the urine approach that of the serum. The chlorine concentration of the latter sinks during the diuresis. It remains unchanged in a nephrectomized animal. The main action of sodium nitrate is on the kidney.

Heart Beat and Liver.—Asher continued his investigations on the enhancing influence of liver extracts on the heart beat. They may reverse the action of small doses of atropine.

Insulin and Carbohydrates.—Lublin found in healthy subjects an increase of the respiratory quotient above 1, after administration of small amounts (30 Gm.) of levulose and injection of insulin. This speaks for a synthesis of fat, while it seemed that epinephrine and pituitary extracts act as antagonists of deposition of fat.

Medizinische Klinik, Berlin

22: 1061-1096 (July 9) 1926

Tuberculosis Problems. R. Schmidt.—p. 1061.
Angina Pectoris. H. Kohn.—p. 1063. C'en.
Morphinism. B. Hahn.—p. 1068.
Torsion of Cecal Cyst. Flick.—p. 1071.
Rhabdomyoma of Tongue. A. Rütz.—p. 1072.
Stimulation Treatment. Walcha.—p. 1072.
Cholecystography. S. Weiss.—p. 1073.
*Serum Sickness. F. Spehlmann.—p. 1074.
Epinephrine Injections. M. Lévai.—p. 1075. C'td.
Contusion of Chest and Cancer of Larynx. P. Frank.—p. 1080.
Cancer and Its Treatment. O. Strauss.—p. 1083. C'td.

Serum Sickness.—Spehlmann observed a grave serum sickness in himself and in a nurse after preventive injection of 2.9 cc. of diphtheria antiserum. He had received a similar injection twenty-three years before, the nurse fourteen years before. His wife, who was injected for the first time, remained free from symptoms.

Monatsschrift für Geb. und Gynäkologie, Berlin

73: 253-386 (June) 1926

*Innervation of the Uterus. M. Gerstmann.—p. 253.
Werhoff's Theory of Normal Labor. N. Tschistiakoff.—p. 258.
Milk Injections in Gynecologic Inflammations. W. Butomo.—p. 273.
Choice of Operations for Retroflexed Uterus. W. Feldmann.—p. 289.
*Bilirubinemia of Pregnancy. Mandelstamm and Nogeikoff.—p. 297.
Peritonitis and Extra-Uterine Pregnancy. G. H. Schneider.—p. 304.
Case of Sarcoma of the Vagina. Z. v. Szathmáry.—p. 312.
Pendulous Breast and Pendulous Abdomen. H. Küster.—p. 316.
History of the Surgeon's Glove. E. Ebstein.—p. 341.

Innervation of the Uterus.—Degeneration of the lowest sacral segments of the cord, from trauma, was evidenced in Gerstmann's case by complete anesthesia and analgesia from the second or third sacral segment down, with incontinence of bladder and rectum. Nevertheless, the patient, becoming pregnant, felt the child's movements, and the pain of normal delivery was undiminished. From a comparison of this with published cases, he concludes that labor is independent of the connection of the motor nerve paths with the spinal cord, that the centers lie in Frankenhäuser's ganglion, the nerve cell groups of which have a large measure of independence. The sensory paths for the perception of the fetal movements enter the cord between the middle thoracic and lower lumbar and those for the labor pains between the fifth lumbar and second sacral segments.

Increase of Bilirubin in the Blood as a Sign of Pregnancy.—Using Vogl and Zins' oxidation test, Mandelstamm and Nogeikoff found increase of bilirubin in the citrated plasma in 80 per cent of sixty-two normal pregnant women in the second to the tenth month. For the first three months the percentage was 84. In pernicious vomiting of pregnancy, tubal abortion and recent uterine abortion, the test was positive. In ten healthy, non-pregnant women, it was negative. Seven non-pregnant women, suspected of pregnancy, reacted negatively, except one. In twenty-five inflammatory gynecologic processes, 12 per cent gave a weakly positive reaction.

Münchener medizinische Wochenschrift, Munich

73: 1101-1142 (July 2) 1926

Medical Philosophy. A. Bier.—p. 1101. C'td.
*Sex Determination. W. Goetsch.—p. 1103.
Heredity and Psychoses. H. Hoffmann.—p. 1104.
*Sulphate Waters and the Liver. Arnoldi and Roubitscheck.—p. 1106.
Internal Treatment of Gastric Ulcer. A. Schüle.—p. 1107.
Fate of Sodium Phenoltetraiodophthalein. K. Hoesch.—p. 1109.
Examination of Urine. A. Tilger.—p. 1111.
Acute Methemoglobinemia from Gas Bacillus Sepsis. Eichler.—p. 1111.
Forensic Obstetrics. M. Hofmeier.—p. 1113.
Feer's Disease. A. Bratusch-Marrain.—p. 1114.
Improved Roentgenoscopy. Pleikart Stumpf.—p. 1114.
Extension Apparatus for the Lower Extremity. A. Braun.—p. 1115.
Medical German. F. Schultze.—p. 1118.
Medical Ethics. Burkard.—p. 1118.

Sex Determination.—Certain fresh-water polyps, such as *Hydra attenuata*, form, under normal circumstances, buds which develop into animals of the same sex as the parent. Goetsch cut these hydrozoa into pieces which he strung closely together on a hair. Such parts grow together. When using pieces from animals of different sexes, he obtained hermaphrodites only rarely and only as a transient condition. The other hydras adopted one sex, even when they had been united only for a day or two and separated again. When the hydras are cut at the time of ripening of the sex products, the subsequent regeneration uses up the sex gland. Some of these animals changed their sex—apparently because the other potential sex gland had gained the predominance during the resorption of the hypertrophic gland. He concludes from this and other observations that the definite sex depends only on the inhibition of the other potential sex. Small causes, which are being gradually discovered and brought under control, determine the differentiation of sex.

Action of Sodium Sulphate Waters in Liver Disease.—Arnoldi and Roubitscheck conclude that Carlsbad water (1 teaspoonful of the salt in 150 cc. of water) promotes the change of the bound (indirect) bilirubin into the direct, which can be eliminated easily. The bilirubin concentration of the blood sinks rapidly. They also point to the slight alkalosis and restoration of the acid-alkali balance after repeated intake of the water.

Wiener klinische Wochenschrift, Vienna

39: 773-804 (July 1) 1926

*Active Substances of Leukocytes. A. Neumann.—p. 773.
*Heart Fibrillation and Electric Current. L. Haberlandt.—p. 774.
Sedimentation Test in Tuberculosis. Mayrhofer.—p. 776. C'td.
Thyroid Preparations. E. Lenk and P. Liebesny.—p. 782.
Lipoids as Antigens. F. Ornstein.—p. 785.
*Occult Bleeding. K. Usami.—p. 786.
Influenza Epidemic. A. Rosenblüth.—p. 789.
Atherosclerosis of Kidneys. V. Kollert.—p. 790.
Treatment of Fractures. L. Böhler.—p. 791.
Reform of Curriculum. H. H. Meyer.—p. 792.
Diabetic Coma. H. Elias. Supplement.—pp. 1-12.

Active Substances of Leukocytes.—Neumann obtained from the bone marrow of various animals, especially horses, a sub-

stance containing usually eosinophilic granules. Injections of small amounts of this substance induced a prolonged leukocytosis. The extract acts as antagonist of pilocarpine. He also made some experiments on mice, and believes that the large amounts of his extract improve the resistance of the animal to larger doses of some germs, but decrease it, when the dose of the bacilli is smaller.

Heart Fibrillation and Electric Current.—Prévost and Batelli discovered in 1899 the possibility of restoration of normal heart beat by high tension currents in animals in which they had induced ventricular fibrillation by irritation with faradic currents. Jellinek confirmed this and suggested to try in desperate cases of electric injury a very short application of the same current that had caused the apparent death. Haberlandt agrees with him, and would extend the indication as the very last therapeutic resort in the ventricular fibrillation due to other acute injuries (chloroform, great pain or fright). The ventricular fibrillation is best diagnosed by electrocardiography. Another symptom is a soft continuous murmur over the heart region, with absence of normal heart sounds.

Occult Bleeding.—Usami describes the details of his technic of examination of stool for occult bleeding by means of leukobases, especially those of fuchsin and methyl violet. One of the precautions necessary to prevent spontaneous oxidation is addition of hydrogen peroxide after the extract from the feces has been mixed with the reagent. Addition of a drop of pyridine accelerates the reaction.

Zeitschrift für die ges. exp. Medizin, Berlin

50: 625-797 (June 10) 1926. Partial Index

Excretion of Iron in the Bile. T. Brugsch and J. Irger.—p. 625.
*Epinephrine Glycemia and Respiratory Metabolism. Erichson.—p. 637.
Excretion of Uric Acid. M. Kalf-Kalif.—p. 672.
Pathologic Decomposition of Protein. M. Schierge.—p. 680.
*Water Metabolism. R. Meyer-Bisch and W. Wohlenberg.—p. 728.
Sensitiveness of Human Organism to Pituitary Extract. K. Csépai and S. Weiss.—p. 745.
Influence of Insulin on Surviving Liver. V. Laufberger.—p. 754.
*Low Temperature in Insulin Poisoning. V. Laufberger.—p. 761.
Phosphorus Metabolism in Nephritis. H. Heinelt.—p. 766.
Action of Digestive Ferments on Insulin. Weiss and Pogány.—p. 786.

Epinephrine Glycemia and Respiratory Metabolism.—Erichson studied epinephrine glycemia in four healthy men. The nourishment of the experimental subjects consisted for several days chiefly of proteins and very small quantities of fats and carbohydrates. After twelve hours of fasting, 0.8 mg. of epinephrine was injected subcutaneously. During a period of more than four hours a series of blood and gas analyses was made, to follow the influence of the epinephrine. It was shown that the metabolic influence of epinephrine is marked by an increase of oxygen consumption and increase of blood sugar. As Bornstein and his pupils have found, there is no parallelism between the increase of blood sugar due to epinephrine and the respiratory quotient as an expression of increased combustion of carbohydrates. The urine acidity did not show any relationship to the combustion of epinephrine sugar, contrary to the opinion of Endres and Lucke. The author holds the opinion that there is no increase in the combustion of carbohydrates in epinephrine glycemia, as there is in the alimentary. A similarity between glucose and epinephrine glycemia exists only during the first hour, before the alimentary glycemia from dextrose has entailed increased combustion of carbohydrates.

Water Metabolism.—Meyer-Bisch and Wohlenberg administered common salt to nine healthy subjects, and the composition of blood, the body weight and the salt balance were recorded. This was followed by salt administration combined with sugar (peroral). In seven of the nine experiments the combination of sugar and salt effected a stronger and more prolonged dilution of the blood. In four cases there was an increase of water in the organism for several days. Eight experimental subjects excreted the salt incompletely and more slowly than with the salt alone. In three cases the sugar produced an absolute hypochloruria. The inhibiting influence of sugar administration cannot be explained on a basis of renal insufficiency, because glycosuria was never observed; it depends on changes in the tissues. To study the influence of the suprarenals on salt and water metabolism in diabetes, they injected epinephrine in combination with administration of salt. Two experiments on normal individuals showed a decrease of the salt excretion similar to that from administration of sugar. They conclude that there may be an antagonism between the suprarenals and the pancreas in the regulation of metabolism of salt.

Action of Low Temperature in Insulin Poisoning.—In nine tables Laufberger records fifty determinations of the respiratory quotient in normal rabbits and in rabbits poisoned with insulin. The temperature in the respiratory chamber was decreased from 29 to 10 C. and changes in respiration and body temperature were manifest. It was shown that normal rabbits increased their production of heat, the respiratory quotient was slightly increased, and the body temperature remained normal. Animals poisoned with insulin increased their production of heat slightly, the respiratory quotient was much increased and the body temperature remained subnormal. They were, in other words, unable to increase the production of heat to obtain the normal temperature, owing to lack of carbohydrates. It proved impossible to force dogs poisoned with insulin to perform severe muscular work.

Zeitschrift für Kinderheilkunde, Berlin

41: 413-554 (July 15) 1926

Pneumonia in Infants. E. Nassau.—p. 413.
*Glycolysis in Rickets. E. Freudenberg and A. Welcker.—p. 466.
*Anemia in Children. B. de Rudder and F. Wesener.—p. 479.
Pospischill's Aphthoid. A. Fessler and F. Feyrter.—p. 489.
*Electrolytes, Muscles and Tetany. H. Behrendt.—p. 499.
Diabetes in Infants. H. J. Arndt and A. Welcker.—p. 518.
Salivary Urea. C. Falkenheim.—p. 530.
Still's Disease and Scleroderma. W. Stoye.—p. 538.
*Dissociation of Toxin-Antitoxin. M. Schönberger.—p. 546.
Premature Puberty. S. Gross.—p. 552.

Glycolysis in Rickets.—Freudenberg and Welcker observed an inhibition of glycolysis in the incubated blood from children with grave rickets. Irradiation of the children was followed by a restoration of the faculty. Tetany does not lower the glycolysis. The slower metabolism in rickets (Freudenberg-György) is characterized by hypophosphatemia, inhibition of glycolysis and lower lactic acid content of the blood. Hexose phosphate is decomposed by the blood in rickets, but lactic acid seems to be resynthetized to dextrose, which may account for the apparent inhibition of glycolysis.

Anemia in Children.—Rudder and Wesener observed a grave anemia in three infants born from the same parents. The first two died. The clinical symptoms were those of a familial hemolytic jaundice. The anatomic changes resembled those of pseudoleukemic anemia.

Electrolytes, Muscles and Tetany.—Behrendt observed a progressively increasing potassium content of the muscles in parathyroprival dogs. The lactacidogen content of muscles is not lowered during the spasms. This differentiates them from voluntary contractions and convulsions of cerebral origin. The calcium content does not change. The potassium concentration of the serum increases in guanidine poisoning, the ionized calcium decreases. The calcium content of the muscles decreases, potassium remains the same. This would speak against an identity of parathyroprival tetany and guanidine poisoning.

Dissociation of Toxin-Antitoxin.—Schönberger investigated the problem of dissociation of diphtheria toxin-antitoxin mixtures. She found no indication of splitting of an overneutralized mixture after injection in children. The toxin content of the dose corresponded to $\frac{1}{50}$ of a lethal guinea-pig dose.

Zeitschrift für klinische Medizin, Berlin

103: 361-578 (June) 1926

*Hydremia and Alkali Reserve. H. Petow and W. Siebert.—p. 361.
*Epinephrine Reaction. H. Zondek and F. Behrendt.—p. 373.
*Tissue Respiration. K. Grassheim.—p. 380.
Differential Leukocyte Counts. A. Weiss.—p. 427.
*Shifting of Neutrophiles. A. Egoroff.—p. 441.
*Biochemistry of Hookworm Anemia. S. Narita.—p. 452.

Endocrines and Arthritis. M. H. Herzberg.—p. 507.
Therapeutic Malaria. L. J. Leisermann and G. W. Rubaschkin.—p. 530.
Recurrens and Arsphenamine. J. Oettinger.—p. 546.
*Cinchophen and Gastric Secretion. K. Kindermann and M. Schechter. —p. 558.
*Low Blood Pressure. H. Curschmann.—p. 565.

Hydremia and Alkali Reserve.—Petow and Siebert point out that dilution of the blood results in a lowered combining power for carbon dioxide, and diminishes the buffer capacity of the blood. Addition of strong acids does not change the buffer capacity, and only lowers the alkali reserve. They determined both qualities by a graphic method indicating the carbon dioxide-combining power of the blood at different tensions of carbon dioxide. They had various results in nephritis. Hydremia had a remarkable influence and may be the sole cause of hypocapnia. In other cases there are, besides that, disturbances of the acid-base equilibrium. Some of them increase the hypocapnia due to hydremia. In other cases the excess of alkalies counteract it. There is hardly any eucapnia to be found in grave disturbances of the kidney.

Epinephrine Reaction.—Zondek and Behrendt changed the vagotonic as well as the sympathicotonic reaction to epinephrine toward the normal by injections of a vegetable protein, and even by intragluteal injections of olive oil. The reaction also changed in obese patients according to whether the diet caused retention of water and salt or not. They believe that the colloidal condition of tissues and capillaries determines the action of the hormone. This probably applies also to the thyroid hormone, and may be the cause of its failure to influence certain fat deposits localized in the subcutaneous tissue, rich in water.

Tissue Respiration.—Grassheim investigated the oxygen consumption of thin sections made from surviving organs of laboratory animals that had been subjected to various experiments. There was no increase of the respiration above normal in any one of the experiments, even when such an increase had certainly occurred before the animal was killed. Ether anesthesia had no influence. Contrary to this, chloroform sometimes made irreversible changes, expressed by a lower respiration of the surviving tissue and by histologic changes. Phosphorus poisoning also lowered the respiration of the tissue except where the sections were histologically intact. The most peculiar depression of oxygen intake occurred in some of the animals which had been subjected to forced feeding with protein. He believes that this was due to an indifferent behavior of the accumulated "reserve" protein in the cells.

Shifting of Neutrophils to the Right.—Egoroff designates the presence of less than 3-4 per cent of neutrophils with undivided nuclei, with simultaneous increase of the segmented neutrophils above 63 per cent, as shifting to the right. He found it in about 20 per cent of repeatedly examined healthy subjects. The shifting is relatively stable. Diseases which usually cause a shifting to the left (toward the undivided nuclei) may not produce the change. The majority of these subjects had an accelerated reaction to stimuli in psychologic tests, and the faculty of concentrating was increased.

Biochemistry of Hookworm Anemia.—Narita investigated the fragility of erythrocytes and the condition of the blood, especially its lipoid content and its lipolytic ferments, in hookworm patients as well as in experimental anemia. He was able to induce in rabbits blood changes identical with those of hookworm anemia by a water soluble colloidal hemolytic substance extracted from hookworms. The increased resistance of erythrocytes is evident before the anemia sets in. The blood lipoids are decreased in the disease.

Cinchophen and Gastric Secretion. — Kindermann and Schechter produced an increased gastric acidity by intravenous injections of a cinchophen derivative. The only exceptions were encountered in pernicious anemia and grave cachexia, exophthalmic goiter, and cancer. The injections seemed to be of therapeutic value in functional achylia and subacidity.

Low Blood Pressure.—Curschmann believes that permanent low pressure has a protecting effect on the organism. He always had the impression that a hypofunction of the thyroid defers the aging process, especially when it lowers the blood pressure.

Zeitschrift für urologische Chirurgie, Berlin

20: 1-126 (July 17) 1926

Ureterocele. J. Gottlieb.—p. 1.
Correction of Epispadial Anomaly. A. Ritter.—p. 5.
Calculus in Dilated Ureter. J. Minder.—p. 13.
*Acid-Alkali Excretion Test. G. von Pannewitz.—p. 19.
Diagnosis of Horseshoe Kidney. D. N. Eisendraht et al.—p. 27.
Congenital Enlargement of the Bladder. H. Angerer.—p. 36.
Histology of Rupture of Bladder. E. Lehmann.—p. 55.
Nonradiopaque Renal Calculi. Z. Kairis.—p. 66.
Papillomatous Tumors of Kidney Pelvis. K. Haslinger.—p. 77.
Tumor in a Kidney Capsule. K. Haslinger.—p. 89.
*Nephrotomy. Its Importance and Technic. Roseno.—p. 96. C'td.

Acid-Alkali Test of Kidney Function.—Pannewitz asserts that Rehn's acid-alkali test yields information not only in regard to the functional capacity of the kidneys, but throws light also on the physiology and pathology of the electrolyte system in general. Dilute hydrochloric acid (25 drops) is given by the mouth, and eighty minutes later 50 cc. of a 4 per cent solution of sodium bicarbonate is injected intravenously. For children, drinking a pint of milk takes the place of the intravenous injection. All disturbances in the mineral metabolism, all conditions which increase the alkali reserve (pregnancy for instance), or reduce it (liver disease), modify the urine reaction correspondingly and can be differentiated by this function test, especially when supplemented by determination of the carbon dioxide content and capacity of the blood. It is particularly useful as a gage of the effect of an acid diet in treatment of defective consolidation of fractured bones.

Nephrotomy. — Roseno declares that none of the classic technics for nephrotomy are free from danger of hemorrhage. He reports after-hemorrhage in 10 per cent of the 1,800 nephrotomies for calculi in the last twenty-five years; 5.8 per cent died in spite of secondary nephrectomy. Examination of kidneys that have been incised months or years before has shown that the incision itself causes less harm than the suture. The atrophy from pressure of the deep sutures, with new infarct formation, is responsible for the after-hemorrhage, and this injury of the parenchyma must be avoided. He proposes an ideal method for nephrotomy, to be described in the continuation of his article.

Zeitschrift für Urologie, Leipzig

20: 401-480, 1926

Autovaccine Treatment of Urinary Infections. S. Went.—p. 401.
*"Massage of the Prostate." Zollschan.—p. 416. Idem. Sprinz.—p. 420.
Nephrolithiasis in Eastern Thuringia. Nicolas.—p. 421.
Extraction of Large Calculus from Female Bladder. Egyedi.—p. 426.
"Congenital Atony of the Ureter." J. Gottlieb.—p. 429.
*Syphilis of the Prostate. T. Cohn.—p. 430.
Ureterocele in the Bladder. C. von Landwüst.—p. 439.

Massage of the Prostate.—Zollschan's experience with massage of the prostate has been decidedly favorable. The tissue enclosing the prostate is stout, and there is much less danger of perforation than in case of epididymitis. With interglandular processes the pathologic secretion may stagnate for years; apparent clinical cure may conceal lurking infection. This may flare up, simulating new infection of the urethra. Consequently, when the acute stage of the process is past, which can be determined partly by Picker's temperature control and partly by regurgitation of pus, the cavities of the gland must be evacuated. Picker's diagnostic method allows the separate foci to be discovered and eliminated. Treatment based on the pathology of the adnexa, he reiterates, gives incomparably better results than treatment addressed principally to the urethral mucosa. Sprinz, on the other hand, denounces massage of the prostate, saying that he is one of many who have witnessed epididymitis develop as a direct consequence of it. He insists that the prostate should be left in peace, and treatment focused on enhancing the patient's resisting powers.

Syphilis of the Prostate.—Cohn has encountered three cases of gummatous disease of the prostate in the last five years, and has found nineteen cases on record. From two to thirty-six years had elapsed from the infection with syphilis. All the patients complained of frequent desire to urinate and

difficulty and pain in micturition. The urethra was usually apparently normal. In eight cases examined with the cystoscope, it revealed lesions in the bladder. Palpation through the rectum disclosed great variety in size and shape of the prostate, as also in consistency and sensitiveness. In all, treatment for syphilis promptly banished the symptoms, and the prostate returned to normal size and shape. The enlargement was often restricted to one side lobe. The absence of polyuria and of residual urine and the slight tenderness of the prostate are further clues to the nature of the process. In still another case, gummatous disease of the prostate was a necropsy surprise in an apparently healthy young man killed in an accident.

Zentralblatt für Chirurgie, Leipzig

53: 1553-1616 (June 19) 1926

Radical Removal of Carcinoma of Prostate. A. Läwen.—p. 1554.
Gunshot Wound of Liver and Gallbladder. P. Balkányi.—p. 1560.
Perforation of Large Intestine by Fish Bone. F. Brüning.—p. 1563.
*Food as Cause of Ileus. G. Haselhorst.—p. 1564.
Ludloff's Operation for Hallux Valgus. N. Grzywa.—p. 1567.
Blocking the Lumbar Plexus. H. Degenhardt.—p. 1570.
Position and Formation of Amputation Stump. A. Schanz.—p. 1573.
Gangrene of Previously Incarcerated Omentum. E. Metge.—p. 1574.

Food as Cause of Ileus.—In a woman, aged 63, a fig, and in a man a mixture of apple, pear and peas, blocking the intestine, was the cause of ileus. Haselhorst operated on both these cases, but he advises expectant treatment with purgatives and high enemas in the less stormy cases, if the cause of the ileus is ascertained. Cherry stones in large quantities, raw beans, cucumbers and raw or half-cooked oatmeal are noted in the literature as having caused ileus.

53: 1617-1680 (June 26) 1926

*Bacteriology of Gastric Surgery. W. Löhr.—p. 1618.
Incorrect Ligation of Cystic Duct. C. Flechtenmacher.—p. 1625.
*Emphysema as Sign of Ulcer Perforation. J. Vigyázó.—p. 1627.
Steel Fragment Two Years in Median Nerve. L. Seyberth.—p. 1632.
Familial Situs Inversus. A. H. Hofmann.—p. 1633.
Deutschländer's Disease of the Metatarsus. R. Bittrolff.—p. 1634.
"Errors and Blunders in Surgery." C. Prima.—p. 1637.

Bacteriology of the Stomach.—Löhr's studies in the bacteriology of perforated gastric and duodenal ulcer lead him to believe that in surgery on the stomach the colon bacillus flora is not greatly to be feared. In no early case of peritonitis following perforated gastric or duodenal ulcer, of twenty-two cases examined, did he find the colon bacillus flora in the free peritoneal cavity. In gastric surgery, bacteria entering from the mouth during the operation are more to be feared. In its early stage peritonitis from perforation is benign, while later, as a colon bacillus peritonitis, it is malignant.

Subcutaneous Emphysema in Ulcer Perforation.—Vigyázó describes a case in which, in a tabetic, the difficulty of ruling out gastric crisis from the differential diagnosis was overcome by the discovery, on palpation, of subcutaneous emphysema of the abdominal wall. At operation he found a pinhead perforation of a callous ulcer of the anterior wall of the duodenum. The margin of the serosa overhung the opening and acted as a valve to keep the air from the duodenum out of the abdominal cavity and force it instead into the subcutaneous tissue by way of the swollen serosa, the subserous tissue and the ligaments.

Zentralblatt für innere Medizin, Leipzig

47: 649-664 (July 3) 1926

*Copper and Intestinal Catarrhs. H. Sternberg.—p. 649.

Copper and Intestinal Catarrh.—Summarized in these columns Aug. 28, 1926, p. 716, when published elsewhere.

47: 665-688 (July 10) 1926

Thirty-Eighth German Congress for Internal Medicine at Wiesbaden. S. Litzner and R. E. Mark.—p. 665.

47: 689-712 (July 17) 1926

*Early Cachexia with Epithelioma of Thyroid. R. Dvořak.—p. 690.

Severe Cachexia as Earliest Symptom of an Epithelioma of the Thyroid.—In Dvořak's patient, a woman aged 56, with very severe cachexia, the few symptoms pointed erroneously to carcinoma of the gallbladder. There were no symptoms incriminating the thyroid, but histologic examination of the thyroid after death showed the beginning of malignant degeneration of an exophthalmic goiter.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

2: 229-328 (July 17) 1926

The Writing of Medical Articles. G. van Rijnberk.—p. 230.
*Electric Pasteurization of Milk. E. C. van Leersum.—p. 234.
*Reversible Gel Formation and Fixation. M. A. van Herwerden.—p. 245.
*The Increase in Pulmonary Cancer. W. M. de Vries.—p. 255.
*Serotherapy in Postvaccinal Encephalitis. H. Aldershoff.—p. 267. Idem. F. S. van B. Bastiaanse.—p. 268.
Sarcoma in Rectum and Carcinoma in Gallbladder in Elderly Woman. O. H. Dijkstra.—p. 270.

The Electric Current in the Sterilization of Milk.—Van Leersum reports the results of research which have confirmed the bactericidal action on milk of the high frequency current. This occurs whether copper or carbon electrodes are used, but the carbon electrodes have the advantage that they do not destroy the antiscorbutic vitamin in the milk. He tabulates the outcome of various bacteriologic tests and inoculation of guinea-pigs with electrically treated milk containing tubercle bacilli.

Reversible Gel Formation and Fixation.—Van Herwerden describes his observation of gel formation in protozoa and metazoa under the influence of chemicals such as are used in fixation. The reversible gel formation is on the road to and very close to the nonreversible process of coagulation, that is, fixation. The reversibility of gel formation seems to decrease with the age of the cell and in pathologic conditions. This can be recognized in the dark-field microscope. Infusoria that have been exposed to the ultraviolet rays present a different aspect, although no difference in their lively movements can be detected, when compared with the nonexposed ones.

Cancer of the Lung.—De Vries found a pulmonary cancer in twelve female and in twenty-seven male cadavers in a total of 8,000 necropsies. More than half were observed in the last four years. No predisposition from family history or occupation could be discovered. This is what would be expected if street factors were responsible, asphalt, exhaust gases, etc.

Encephalitis Developing After Vaccination Against Smallpox.—Bastiaanse brought this question to the attention of the health board of the League of Nations in the effort to obtain serum from man or animals that had just recovered from severe smallpox, hoping to utilize it in production of an effectual antiserum. Serum for the purpose can be obtained from Bulgaria, from sheep that have been having severe sheeppox. But Gordon has succeeded in obtaining an effectual antiserum by actively immunizing animals by the cutaneous and intravenous route. No pustule develops in a rabbit inoculated with the most potent virus the day after subcutaneous injection of 1 cc. of this antiserum. Aldershoff has produced an antiserum on this principle, and announces that the Utrecht state serum institute is prepared to deliver this antiserum on request of physicians confronted with a case of postvaccinal encephalitis. Terburgh, Levaditi and others regard this encephalitis as the flaring up of a latent virus already present in the central nervous system, possibly the virus of epidemic encephalitis or of poliomyelitis. Lucksch, on the other hand, believes that it is a specific smallpox encephalitis. The postvaccinal encephalitis develops nine to fifteen days after the vaccination.

Ugeskrift for Læger, Copenhagen

88: 693-710 (July 29) 1926

*Sexual Inversion in Experimental Hermaphrodism. Pézard et al.—p. 693.
Ovarian Transplants in Cocks. Pézard et al.—p. 694.
Metal Salts in Treatment of Tuberculosis: Cadmium. N. Lunde.—p. 695.

Experimental Hermaphrodism.—Pézard, Sand and Caridroit report further experiments on fowls with transplanted gonads of the other sex. They confirm that the transplant may continue its function and exert a profound influence on the secondary sexual characters, without impairing the general constitution. In one noncastrated cock the ovary contained three young ova a year after its implantation, notwithstanding the presence of both normal testes.